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ABSTRACT

This report primarily summarizes quantitative information on teacher training which is abstracted in the Educational Manpower Information Sources Project (EMAP). The information represents research and development documents, periodical literature, program and operating data, newspaper articles, Congressional hearings and reports, and a variety of other surveys. Approximately 325 document abstracts are contained in the information file, which is on loan at the library of the ERIC Clearinghouse on Teacher Education. (JB)

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Report on: Quantitative Information on Teacher Training

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QUANTITATIVE INFORMATION
ON TEACHER TRAINING

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I. FOREWORD

I. FOREWORD

The U. S. Office of Education (USOE) requested that the National Planning Association (NPA) write a report on "Quantitative Information on Teacher Training," as part of the educational manpower project. This report was to be based on relevant abstracts prepared or identified during tasks performed earlier in the study. NPA found it necessary, in order to write a meaningful report, to analyze data in some of the basic documents when summary information in the abstracts was found to be insufficient to illuminate an important issue. However, limitations of time, staff and funds curtailed this effort to a minimum.

NPA was also required to submit copies of abstracts considered significant and directly focused upon teacher training, along with both subject and author indexes. These are enclosed as part of this report.

The task of summarizing the contents of the abstracts was designed to show how data on educational manpower originating from sources external to USOE might be used to serve various needs of management in USOE.

Many new demands and programs are being placed upon the educational establishment by Congress, local legislators and the public. Programs such as those for raising the level of performance of the disadvantaged, for racial balance, for the handicapped, for the preschool child, for drug control, and for the environment, all require responsive actions by school leadership, teachers and support personnel. Additional burdens are thrown upon school personnel in an environment in which budgets are limited and accelerated change in multiple fields of human endeavor affects the children's value system. their discipline, their motivation, and their work performance. In this environment, USOE required sharp focus upon information sources concerning teacher training that would display relevant data and researches completed on educational personnel. The latter represent a major and highly important component of the input resources into the educational process which is most important in determining the manner in which all educational resources and institutions respond to the needs of target populations.

NPA found that data sources external to USOE's reporting system contained valuable information. These data sources should be drawn upon in a systematic manner to help illuminate issues of major concern to top management in USOE. Particularly when used in combination with data generated by the regular USOE reporting systems, such sources can inform management as to program status, trends and problems. They can also provide a rich yield of information to aid management at all levels in arriving at policy and program planning decisions, in answering Congressional inquiries, and in improving programs and performance with respect to educational personnel. Highlights from the abstracts and some of the official documents upon which they are based follow.

Chart I on page 2a dramatically depicts a current and prospective excess supply of graduate teachers in relation to demand that is likely to continue through the seventies. The data upon which it is based comes from a National Education Association (NEA) assumption that 37% of all graduates receiving the bachelor's or first professional degree will be prepared to teach. If current trends continued, this would produce 412,000 graduates prepared to teach in the year 1979 alone, with placement likely for only 112,000! Over two million graduates prepared to teach would be excess to the demand for the period of the seventies.

Although not operating exactly as an early warning system, knowledge of the excess, publicized by USOE, NEA and others, is beginning to have some impact. This report cites one recent survey showing that there has been a 14 percent decrease in freshmen entering into preparation for teaching this year over last. Other reports show that some schools are discouraging some applicants from entering the educational professions. However, other schools believe that they should only advise students of the supply-demand situation, but that they have no responsibility to reduce the numbers of those entering the field.

The policy and program implications of these data are highly significant. NPA believes that widespread dissemination of these facts through USOE, NEA and other educational institutions and through guidance and occupational counseling personnel will most likely help to reduce sharply the numbers entering the field. This would reduce the surplus below that projected. There is nothing sacrosanct about having 37 percent of all graduates prepared to teach. However, the excess is so large that more than voluntary action by students and occasional action by a teachers' college to reduce entrants into the field would appear to be essential. In fact, while one university was reducing enrollment in teacher preparation as consistent with the public good, another college could be expanding enrollment. Some government intervention would appear essential to facilitate better coordination, planning and actions to bring supply into more effective balance with demand. Incentives and disincentives could be applied with discrimination. For example, the provision for forgiving loans to students entering education could be eliminated except for shortage areas.

Another strategy, in addition to decreasing supply, would be to improve the quality of education through reducing the ratio of pupils to teachers. However, this does not appear practicable as a major way of reducing the excess numbers in view of local budgetary constraints. Elimination of shortages of teacher personnel in areas of need, such as for vocational-technical education, the education of pre-school children, education of the disadvantaged, education of the handicapped, and for bilingual teachers is frequently mentioned. The report examined information sources in each of these areas.

The states have recently projected their requirements for additional vocational-technical teachers into 1975-76. The additional requirements amount to about 100,000. However, some portion of this number was already included in the estimated requirements for 1970-80 before estimating the aggregate excess of supply of graduate teachers over demand. Moreover, vocational-technical teachers require subject matter competence. Teachers without adequate preparation cannot be assigned to teach the health, computer programming or trade and industry occupations. A more realistic analysis of the extent to which this shortage area would affect supply and demand is required.

Substantial numbers of teachers of pre-school children may be required during the seventies. Educational research in recent years has stressed the importance of early-age learning exposure, particularly for the disadvantaged child. Steady increases in these programs have been reported by NCES, with almost four million out of the 11.4 million three to five year olds enrolled in pre-primary programs in 1969. If three million more children in this age group were to be enrolled in head-start programs, day care centers, or other programs geared to part-time learning, at a very conservative ratio of one to twenty, 150,000 more teachers would be required.

There are currently several major legislative proposals to get dependent mothers off welfare and in jobs, with their children to be placed in day care centers. This concept would also have some of the dependent mothers trained to run the day care centers as paraprofessionals. There are some interesting policy and program implications here as to the staffing of the day care centers. Would graduates prepared to teach be recruited, or mothers on welfare, or both? Several objectives are being pursued through the legislation, and conflict among them is possible. Finding jobs for mothers on relief may conflict with contributing to the learning process by recruiting well prepared graduates to teach three to five year olds. Several alternative strategies are feasible. The choice could have an important effect upon teacher supply and demand for the seventies, as well as upon achievement of educational objectives.

The literature shows that there may be about 200,000 paraprofessionals employed in the public schools performing instructional and supportive duties of various kinds. Among objectives cited for the program are to find jobs for disadvantaged personnel in the educational establishment, to help establish rapport with minority students and contribute to their improved learning, to relieve the professionals of more routine work and in other ways to assist the teacher. Serious questions are raised as to what impact the introduction of paraprofessionals has upon the supply and demand of teachers, the behavioral outcomes in terms of student achievement, the budgets of schools and the harmony between teachers and paraprofessionals in performing their respective jobs. The literature upon this subject described in this report is perceptive and merits attention.

Only a few of the shortages of educational personnel were highlighted above. Much work needs to be done if the institutions producing teachers are to readjust their programs to fill the demand for personnel qualified in the shortage categories. As documented in this report, there are not enough qualified teacher trainers for occupational education, or for teachers of the handicapped. Lead times are required for their preparation, as well as for the curriculum preparation and other resource inputs required to produce teachers qualified to perform effectively on the job.

Time may be collapsed by the inservice training of teachers already qualified with some components to learn others. The concern and the labor market are national in scope, and federal leadership and funding may be required for effective solutions to difficult problems of planning, coordination and balancing of supply and demand. Therefore, it would appear an active federal leadership role is required in addition to voluntary action to solve some of the major issues described above.

The concern with civil rights has led to the generation of baseline statistics on staffing by racial and ethnic groups. Fall 1970 data show that while minority students comprise 20.9 percent of the total student population, minority teachers are only 10.8 percent of the total teacher population. Black teachers represent 9.4 percent of the total and Spanish-American one percent. The report also identifies data sources which contend that desegregation has resulted in the displacement of black educators and racial discrimination in the filling of vacancies for reporting districts in six southern states. These are issues with policy and program implications to merit attention for some time to come. The USOE has programs underway to remedy these problems, such as teacher development for desegregating schools which is designed to reduce racial isolation by providing training to black personnel. Behavioral outcomes would include acceptance of cultural diversity as well as improvement in the qualification of minority staff members. The 1972 data should reflect what progress has been made in this area.

One of the major new thrusts receiving attention in the educational community and in the literature is performance-based certification. With the support of USOE, several states are attempting to develop certification standards that would be based on actual performance in the classroom rather than the mere accumulation of credits for college courses completed. Florida, Washington and California are experimenting with the development and adoption of performance criteria. It is too early to demonstrate what effect these newer approaches will have on the educational environment and on behavioral outcomes of students - the primary target population of the educational process. These approaches merit attention and surveillance to determine their value, to provide technical assistance where necessary and to provide for wide dissemination of successful results as they occur. Baseline collection of data and an evaluation system would appear desirable.

USOE efforts to improve methods of teacher certification and credentialing are conducted in a difficult environment. First, certification is a state rather than a federal responsibility. Secondly, the states vary widely in terms of criteria and methodology currently used. Thirdly, reciprocity of certification among the states is limited. Fourthly, the introduction of new criteria and a new system of credentialing related to performance would require some thoroughgoing changes of programs at training institutions. Finally, such changes could only be accomplished with the full involvement and cooperation of many institutions, including state agencies, institutions preparing teachers, local schools and major professional organizations and unions. Active federal leadership and persuasion would be necessary to accomplish the desired changes.

The literature shows that the last comprehensive report on the production of teacher graduates by school was published in 1967. It shows separately those prepared for teaching for elementary and secondary schools. It would be most useful if these data were made available annually or biennially, with information on the subject matter the graduate was qualified to teach provided as well. The development of a sound data base is essential for more effective planning and programming with respect to educational personnel.

Teacher training is used in this report as illustrative of the valuable information external data sources can contribute to meet USOE management needs. NPA is aware that the National Center for Educational Statistics in USOE has underway a carefully structured and orderly program for the collection of educational statistics that are nationally descriptive in character. This is a most valuable program for the nation that should be continued. Because of the difficulty and complexity of obtaining valid and reliable data national in scope to serve so many purposes, it will take many years for its fullest development. Meanwhile, it cannot produce data on the status, accomplishments, trends, deficiencies and their policy and other implications for many regular programs and newly emerging programs of high priority interest to USOE management.

The research identified some areas, such as teachers of the handicapped, teacher graduates and paraprofessionals, where an extensive literature already exists with the contents demonstrating the rich yield to be gained from external data sources. Such areas of high priority concern, however, require more than the identification and summary of relevant abstracts. Analysis drawing upon clues yielded by the document search, but carefully structured to meet the needs of top management for policy and program planning, making decisions and other purposes, should be undertaken for the entire area of educational manpower.

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II. INTRODUCTION

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The information that follows is organized by section and page number as indicated in the table of contents. The report primarily summarizes the information entered upon the abstracts. For an analysis of teacher graduates, occupational education, paraprofessionals and some other subjects, reference was also made to the basic documents in order to make this report more meaningful.

In each of the sections of the report you will note that attribution is provided to source documents by both author and subject. Two binders have been provided to the National Center for Educational Statistics, each containing the approximately 325 abstracts which were used in preparing this report. A subject and an author card index were also provided. By looking up the given author or the subject in the appropriate index, the reader is directed to the page number specified for the particular abstract. The abstract will contain additional descriptive information as to the contents of the documents, and where they may be obtained. The following chapters present a summary of the material to be found in the abstracts and documents containing quantitative information on teacher education.

III. TEACHER GRADUATES: NUMBERS EXCESS TO DEMAND

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In the fall of 1969, there were 2,241,000 classroom teachers, kindergarten through 12th grade, in public and private schools.1/ Teaching is the occupation with the greatest number of professionals in the United States. But the formerly sure pathway to employment represented by these large numbers is not the only reason why the teaching professions have regularly attracted large numbers of college youth.

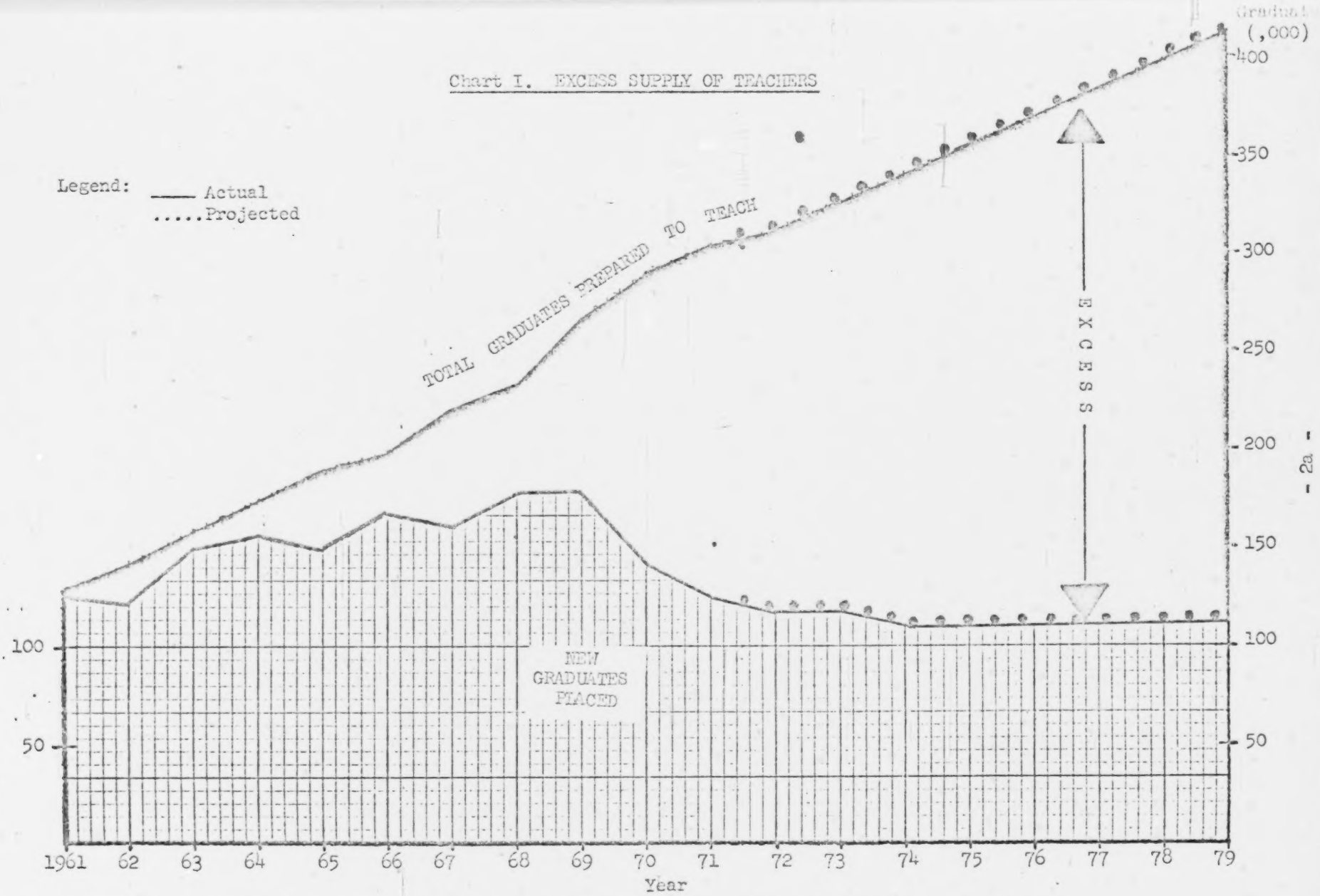
Education as a career appeals to youth as the door which opens upon fuller participation in the American way of life: economic, social, political, and cultural. It makes an important contribution to values held by students and others and has significant prestige status. It is the largest single employer of professional women in the United States. It has been considered the key to participatory democracy, and the protector and disseminator of precious values commonly held. As evidenced in the results of a recent attitude survey on youth and careers in education, education is also considered the key to changing value systems and introducing change into the United States when a break with past traditions is needed.2/

Up through 1969, the number of teacher openings per year had been substantial. Even so, the output of teacher training schools was expanding significantly in excess of the actual number of vacancies. For example, the NEA estimated that a total of 266 thousand graduates prepared to teach were available in 1969, against a total of 178.9 thousand positions to be filled. NEA estimated that only 198.8 thousand of the graduates prepared to teach would be immediately interested in employment as teachers. The latter assumption decreases the 1969 excess of the supply of new teachers versus the demand from 87,000 to 20,000.3/

The NEA data and analyses depict a very critical situation for new teachers during the period from 1971 to 1979. Average annual demand will be for about 113,489 beginning teachers, or for 1,021,391 for the total period. In the absence of any action to curtail the input into schools of education, or to increase the demand for teachers, the total output of graduates prepared to teach for this period would be 3,201,711 graduates, according to NEA projections. This would represent over 2,000,000 graduates prepared to teach in excess of the need, for the nine year period.4/ Chart I depicts this sharp excess of graduates over demand. Note that the number of annual graduates will increase sharply while demand diminishes drastically over the next decade. The estimate of two million graduates prepared to teach who will be in excess of the demand in the seventies reflects the number of qualified graduates who will become part of the potential supply of teachers and overhang the market for years to come, even if they do not enter teaching one year after graduation.

NEA surveyed the occupations of teacher education graduates in 1968-69 and found that a sizeable number may be expected to enter other occupations permanently or to defer their entry into teaching. Of the teacher education graduates of 1969, about 72.4% of elementary teacher graduates and 62.3% of secondary

Chart I. EXCESS SUPPLY OF TEACHERS



Source: Prepared by NPA, March 1972 from data appearing in NEA RESEARCH BULLETIN, October 1971.

graduates found jobs in teaching. The occupational status of 15.8% of the elementary teacher and 17.7% of secondary teacher education graduates had not been reported. The remaining found employment outside of teaching, became homemakers, went into military service, continued formal studies, or were seeking teaching job.5/

The NEA survey of occupational status is conducted annually but only of current graduates. The unknown employment plans of those out of the education labor market for more than one year but trained and qualified to teach now represent a significant data gap that makes even more difficult the balancing of supply of teachers with demand in a rational manner, even if such balance were considered a reasonable national manpower goal. A longitudinal survey of the employment plans of graduates trained to teach but never entering the profession would be essential to supply valid and reliable data to permit sounder planning of supply versus demand of teachers.

The NEA report contains much useful data on the components of supply and demand, assumptions and methodology used in deriving the estimates, as well as special surveys. Some have suggested that in order to replicate the real world, more male teachers should be recruited. Of the 1969-70 teacher education graduates, 11.2% at the elementary level and 45.2% at the secondary level were males. At that time male teachers represented 15.4% and 53.5% respectively of all elementary and secondary school teachers. 6/ Data are also shown on graduates prepared to teach by state. 7/

A recent report suggested that some freshman students have reacted to the reports of surplus by choosing other majors. An annual survey by Parker found a 14.1% loss in freshmen taking teacher training. Of course, in many institutions, majors in education do not start until the sophomore year, and some do not report. Parker asserts that, although often the percentage gain leader in the decade of the 1960's, the decrease this year must be considered in relation to the dramatic conditions of oversupply that have confronted trained teachers within the last two years. In addition, the decline of discipline in many classrooms and schools; the frequent failure of some supervisors and other administrators and teachers in critical situations; the deterioration of the rapport between many parents and teachers, as well as between parents and students; the inadequacy of legal protection for the teacher; rising concern over personal security; and the disconcerting effects of the busing and desegregation issues are all factors that can only deter the entry of students into the teaching profession. 8/

Parker suggests that if improvements were to be introduced, such as reducing the teacher-pupil ratio to staff the nation's classrooms to a 1:20 or 1:15 ratio, that the surplus of teachers would disappear. He states, "The possible positive impact on teacher and student morale, unrest and discipline, student motivation and achievement, innovative teaching methods, learning opportunities for the disadvantaged and minority groups, and the training of superior students would be tremendous. It is ironic that when, perhaps for the first

time in history, we have an adequate supply of trained teachers, except in a few specialized fields, the richest nation in the world cannot afford to, or chooses not to, hire enough teachers to properly staff its schools for the better education of our children! This is an option that merits high priority consideration not only by school and college people, but by government leaders and all parents and citizens. Unless such action is taken, potential teachers should be aware of limited employment opportunities and institutions should consider the same factor in planning for education programs in the future. 9/

The NEA also asserts that improvements of educational quality would eliminate the surplus at least until 1975. Such improvements would include: replacing substandard teachers; reducing pupil to teacher ratios; increasing the number of teachers to serve kindergarten and nursery school children and children with special needs. 10/

No efforts at nationally coordinated action to reduce student input and output at the over 950 schools training teachers were yet in evidence at the time of writing this report. However, numerous reports were beginning to appear in the media of voluntary action to curtail enrollments. The Wall Street Journal, for example, reported upon the experience of one student at Illinois State University who wanted to be a teacher, and who was advised last fall that finding a job after graduation would not be easy. Professors declared their courses were only for the truly committed. The student now plans to pursue a different career. The article claims that "colleges and universities across the country are moving to trim the numbers of teachers they turn out each year. Some are paring programs or tightening requirements. Others, ...are revamping curricula in an effort to channel students into areas where job opportunities are expected to grow.

"Occasionally, stiffer requirements are purely psychological. Sophomores at Illinois State who want to be admitted as majors to the College of Education will have to take a lengthy test -- a necessity that the school hopes will discourage students who aren't really dedicated to teaching. 'When more than one-third of the country's graduates are certified to teach, you know the profession has become a convenient occupation. We're trying to weed out students who want an insurance policy for a job,' explains Henry Hermanowicz, dean of the college.

"Michigan State University's College of Education is reducing the numbers of elementary and secondary teachers it trains annually to 2,600 from 3,300. 'We don't have the resources to handle larger enrollments. Why should the university pour dollars into a field where jobs are scarce?' asks William B. Hawley, dean of the college." 11/

Another newspaper in surveying several universities with respect to this problem, found that "Despite the tight labor market, most insitutions of higher education still take the position that they have no right to tell prospective teachers that they cannot enter the field.

"Typical of the many institutions in which the number of students seeking teacher certification has not dwindled despite the job shortages is the State University of New York College at Brockport, near Rochester. Most faculty and administration members at Brockport feel that while the college is obligated to make certain that a teacher candidate knows what he is getting into, it is not obligated to become more selective in admitting candidates to the teacher training program.

"Brockport, which turned out 1,161 teachers last year, expects to graduate even more this year....At an institution such as Brockport, which began as a normal school, or teacher tr ining school, in the mid-19th century and has jumped from an enrollment of 1,800 to 10,000 in the last decade, growth is considered synonymous with progress. Even in the face of the job shortage, plans are moving ahead to create a new master's level program to offer teacher certification to graduates with liberal arts backgrounds." 12/

It is not the purpose of this report to suggest alternative strategies to bring the output of the over 950 schools graduating new teachers into some reasonable balance with the sharply diminished demand in the form of replacement or new positions. But the fact of 2 million graduates in the nine-year period who cannot obtain jobs for which trained raises visions of unemployed, frustrated professionals and difficult problems. Early action now might mitigate the developing issue so that it can be effectively counteracted.

Field of Preparation. The National Education Association reports the number of persons who were graduated between September 1, 1968 and August 31, 1969 with qualifications for standard teaching certificates. It also shows their field of preparation. For elementary schools, the total graduating class of 88,270 is classified by sex and by field of specialization, e.g.: regular instruction; art; foreign languages; music, and physical and health education. The percentage of the total, and of each separate field, employed in and out of the state is shown.

Similar information is provided for the total number of graduates for secondary education teachers, which amounted to 120,023 for the same time period. Breakdowns are provided separately for the number qualified in the following instructional fields: agriculture; business education; distributive education; English; journalism; speech and dramatic arts; foreign language; home economics; industrial arts; mathematics; music; physical and health education; natural and physical sciences; biology; chemistry; physics; social studies; trade, vocational, industrial and technical; junior high school subjects, general; and other secondary school subjects. The percent of the graduates teaching in and out of state is also displayed.

Similar information is provided on the 5,850 persons qualified for special education and for other resource personnel: e.g., librarian, school psychologist, etc. 13/

Historical rates of teacher education graduates entering high school classrooms by subject areas as well as over-all rates are tabulated. Only over-all rates are listed for regular instruction in elementary classrooms. The great excess of supply in relation to demand is sure to reduce these rates in the future. A high of 83.3% placement of all qualified graduates was shown for elementary schools in 1958 and 74.4% for all secondary school graduates for 1962. 14/

The NEA report also contains an estimate of the supply of 1970 teacher education graduates available to enter classrooms by November 1, 1970 by level and by field of preparation. 15/

IV. SOME TEACHER SHORTAGE CATEGORIES

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A. Introduction

In view of possibly two million teacners excess to effective demand in the seventies, the literature was examined to determine what shortages might exist in special areas. It would be helpful to planners and decision makers if they could determine how many jobs were likely to open up by location and category that might draw down the surplus, and whether the number was significant.

The NEA found that of 67 large school systems in late July, 1970, only 2,314 positions or 0.6% of total positions were unfilled; 227 positions in industrial arts were not filled; 384 in special education; 367 in mathematics; 117 in natural and physical sciences, and 107 in remedial reading.[1]

Another report projected acute shortage fields for winter-spring 1972 in early childhood, industrial arts, special education, and career education. The report stated that: 28 states reported shortages in teachers for early childhood and industrial arts, 31 reported shortages in vocational-technical education, 20 states in special education, and 21 states cited shortages in mathematics teachers.[2] Although of some use to placement officers and students, it would appear that more precise information citing the number of vacancies by state, locality and category is necessary. Perhaps computerized job data banks would be helpful to match available teachers with jobs, as well as to permit more effective planning of student inputs into schools of education in better balance with demand for localities, states, regions and nation.

The following sections treat at greater length with some of the shortage areas. New data were available on vocational education that identify projected vacancies by state, region, and nation. This suggests that a planning system to help bring supply into balance with demand and to help match job seekers with vacancies is indeed feasible.

B. Vocational - Technical Education

Vocational and Technical Education is cited as an area where substantial vacancies currently exist, and where the future need is quite large. Data were recently prepared by the states on educational personnel in vocational education and submitted to the U. S. Office of Education as part of a new five-year planning system for vocational educational personnel.[3] NPA analyzed these reports which were submitted for all states except Alaska, Alabama and Indiana. Data are included for the District of Columbia.

Table I sets forth the totals for 47 states and the District of Columbia. Note that there were a total of 173,178 vocational-technical teachers in 1970-71. This is estimated to increase by about 95,000 teachers to 268,079 in 1975-76. An unknown portion or perhaps all of these 95,000 additional teachers are already included in the estimate by NEA of positions to be filled in the seventies.

It is, therefore, unlikely that the proposed increase in vocational-technical education will draw down significantly the NEA estimated excess of graduate teachers during the seventies.

The state reports result from a very promising new planning and reporting system established by USOE. 4/ Like most new reporting systems of this comprehensiveness and complexity, there are still some shortcomings in the guidance, and improvements are necessary. For example, the states were not required to indicate their methodology for the projections, or where the funds would come from. Further, the subcomponent pieces in the state reports, and therefore in the national aggregates, do not add to the totals displayed.

Table I suggests that the largest increase will come in: the Trades and Industry occupational category (19,497) positions, Office occupations (15,126), Distributive Education (8,365) and Health (5,649). The homemaking, as distinct from the vocational component of Home Economics, is estimated to require an increase of 10,000 positions.

Similar data are available for each of the regions by summary and by states in a computer run that has been made of the data.

Vocational educators conduct an active program of inservice and preservice education to help qualify beginning teachers for positions and to upgrade those already in service. In 1971, approximately 43,438 students were enrolled in preservice personnel development programs. As set forth in Tables I and II, 81,642 teachers or 47% were enrolled in inservice training out of the 173,178 total teachers reported. In 1975-76, preservice trainees were projected to amount to 59,000 and inservice trainees to 121,000, as set forth in Table II. Overall, inservice training enrollment would include about 45% of the total teachers estimated to be on board for the 47 states and the District of Columbia. 5/

Table II shows that Trades and Industry account for the greatest number of participants in both 1971 and 1976 for inservice training followed by Office Education and Homemaking. For Preservice Education, Homemaking leads in both 1971 and 1976, followed by Office Education and Trades and Industry.

Career oriented education on the secondary and postsecondary levels is an area of growing interest, with a corresponding concern for need for adequately prepared teachers of vocational career programs. Teachers of vocational education classes numbered 166,898 in 1969 with highest concentration in the instructional areas of trades and industry (50,592), office (37,923), and home economics (31,845). 6/

An adequately trained teacher is one who not only has the degree, credentials, etc., in the area in which he/she teaches, but has also personal work experience in that area and sustains professional growth and knowledge. The General Report

TABLE I. PROJECTED NEEDS FOR VOCATIONAL EDUCATION PERSONNEL

	ACTUALS	PROJECTED					INCREASE NUMBER OF POSITIONS BETWEEN 1971-76
	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	
TOTAL	173178	201068	219364	237064	252535	268079	94900
SECONDARY	92657	102508	112058	120060	137977	144899	52241
POSTSECONDARY	31474	37734	40460	43501	47054	51051	19577
ADULT	44787	52741	57695	63611	67504	72129	27342
TOTAL BY OCCUP. CATEGORY	153993	174610	186416	199695	212549	225086	71092
AGRICULTURE	12940	14186	13791	14531	14991	15473	2532
DISTRIBUTIVE EDUCATION	11680	14339	15886	17257	18741	20045	8365
HEALTH	8838	10820	11628	12498	13441	14487	5649
HOME ECONOMICS (COMP.)	24030	26653	28489	30255	32174	34067	10036
HOME ECONOMICS (VOC.)	4458	5227	6139	6946	7666	8422	3963
OFFICE	32319	36973	39650	42096	44747	47446	15126
TECHNICAL	8461	9752	10428	11135	11897	12761	4300
TRADES AND INDUSTRY	49622	54538	58010	62269	65830	69120	19497
OTHER	1643	2122	2395	2708	3062	3265	1622

Source: Prepared by NPA based on data reported by 47 states and D. C. to USOE in 1971.
Prepared March 1972

TABLE II. CURRENT AND PROJECTED ENROLLMENTS IN PROFESSIONAL PERSONNEL DEVELOPMENT FOR VOCATIONAL AND TECHNICAL EDUCATION

	1970-71		1971-72		1972-73		1973-74	
	P *	I *	P	I	P	I	P	I
TOTAL	43438	81642	51270	92738	54302	101994	51758	105033
TOTAL SECONDARY	33602	46780	40316	51689	42237	57022	41898	59665
TOTAL POSTSECONDARY	3909	16376	5020	20017	5634	21803	4885	22354
TOTAL ADULT	5927	18486	5934	21032	6431	23169	4975	23014
TOTAL BY OCCUPATION	40002	63605	47519	72377	51247	79168	48957	81309
AGRICULTURE	4881	6743	5142	7477	5357	7856	5082	7922
DISTRIBUTIVE EDUCATION	2318	5159	3238	6170	3653	7029	3502	7290
HEALTH	611	3254	946	3915	1148	4467	1391	4891
HOME ECONOMICS (COMP)	12020	10214	13473	11345	14321	12475	14313	12852
HOME ECONOMICS (VOC)	3201	1986	4370	2731	4843	3203	4432	3364
OFFICE	9217	12249	10376	14193	11235	15254	10906	15833
TECHNICAL	2545	5757	4123	6531	4441	7094	2773	5516
TRADES AND INDUSTRY	5209	18243	5851	20015	6249	21790	6558	23636

* P - Preservice
I - Inservice

Source: Prepared March 1972 by NPA based on data reported by 47 states and D. C. to USOE in 1971

TABLE II. CURRENT AND PROJECTED ENROLLMENTS IN PROFESSIONAL PERSONNEL DEVELOPMENT PROGRAMS

FOR VOCATIONAL AND TECHNICAL EDUCATION

	1970-71		1971-72		1972-73		1973-74		1974-75		1975-76	
	P *	I *	P	I	P	I	P	I	P	I	P	I
	43438	81642	51270	92738	54302	101994	51758	105033	55107	112859	59227	120928
	33602	46780	40316	51689	42237	57022	41898	59665	44325	63652	47525	67952
	3909	16376	5020	20017	5634	21803	4885	22354	5278	23974	5517	25856
	5927	18486	5934	21032	6431	23169	4975	23014	5504	25233	6185	27120
	40002	63605	47519	72377	51247	79168	48957	81309	52102	87159	55445	94363
	4881	6743	5142	7477	5357	7856	5082	7922	5253	8290	5414	8673
ATION	2318	5159	3238	6170	3653	7029	3502	7290	3841	8156	4125	9010
	611	3254	946	3915	1148	4467	1391	4891	1543	5511	1790	5941
OMP)	12020	10214	13473	11345	14321	12475	14313	12852	15183	13614	16058	14627
OC)	3201	1986	4370	2731	4843	3203	4432	3364	4606	3744	4771	4108
	9217	12249	10376	14193	11235	15254	10906	15833	11616	16529	12231	18392
	2545	5757	4123	6531	4441	7094	2773	5516	2969	6027	2947	6388
RY	5209	18243	5851	20015	6249	21790	6558	23636	7091	25288	8109	27224

ch 1972 by NPA based on data reported by 47 states and D. C. to USOE in 1971

of the Advisory Council on Vocational Education[7] includes an overview of teacher training and teacher trainers. It found that programs of teacher preparation vary from state to state, but all states do have explicit training specifications. Similar curriculum patterns include the following areas: (1) General/Liberal Arts -- This is the same preparation required of prospective teachers in other areas and is from 30-50% of the total program. (2) Technical -- Skills and knowledge required for the subject area in which the education student will teach come under this category of training, 30-40%. (3) Professional -- Constituting 10-20% of the program, professional education includes educational courses (i.e., methods, psychology, etc.) and student teaching. In addition to the typical curriculum, some institutions require prospective teachers to demonstrate occupational proficiency through course work and/or related work experience. Certification requirements are fairly consistent, particularly for secondary school teachers and teacher coordinators.

A lucid qualitative analysis of the problems of teacher training in vocational education is given by Evans[8] in his discussion of pre- and inservice programs. Manufacturers and distributors frequently offer high quality intensive training at reduced rates or tuition free for teachers. These schools are operated specifically to train vocational teachers in the use of newer products and services. However, very few school districts will accept teacher attendance as equivalent to comparable time spent in a graduate school.

In some areas, there exist agreements between administrators and employers to reserve part-time and summer jobs for teachers (i.e: trade and industrial teachers). Unfortunately, this is infrequent and many teachers are unable to find part-time or temporary work in their subject. However, actual work experience is an essential form of "inservice" training enabling the teacher to increase skills and knowledge and to remain aware of technical changes in his field. In fact, in an earlier study the author found that "...the only significant difference between exceptionally good and exceptionally poor trade and industrial education teachers was that the effective teachers worked part-time or summers in the occupational field which they were teaching." [9]

In contrast to the attempts at progress in inservice programs, Evans found preservice training deficient and lacking in innovation. Agriculture, business and home economics are simply patterned after other secondary school specialties. For business students, it is sometimes necessary to obtain instruction through community colleges, business schools, or even high schools because the university which they attend has eliminated skill study such as typing, shorthand, and so forth. "Technical education, distributive education, trade and industrial education and health occupations' education generally have no effective programs of preservice education."[10] The responsibility for this situation rests both with state departments of vocational education and the Federal government. For example, vocational education was excluded from the National Defense Education Act of 1965. However, some progressive actions have been

taken and descriptions of two innovative plans are presented. The first was established by the Canadian province of Alberta and is a project worthy of emulation by the American education system. Here skilled, competent employees were recruited for intensive teacher education programs and paid salaries sufficient to retain them (slightly lower than the salaries offered by private industry). The second plan originated in Michigan and provided a combination of on-campus instruction and supervised work experience. Later it was adopted by Illinois. Inadequacies of the program were: (1) Too few students were attracted to it, partly because five years were required to attain the BA degree; (2) salaries would be the same as those for students who completed a typical four-year course; and (3) program graduates were highly sought after by industry (with its higher salaries) and thus they tended to accept jobs other than teaching.11/

Home economics as occupational or gainful employment is an area of vocational education which often receives less attention than other vocational areas. There is, however, a 1971 study by Jewell King 12/ which presents certification requirements specifically for teachers of occupational home economics. This state-by-state survey includes the following findings: (1) Semester hours and course requirements for occupational home economics were either the same (21 states) as or varied only slightly from requirements for consumer and homemaking education; (2) Teaching experience as a requirement for certification existed in only six states; (3) Work experience (averaging 2 years) was required by 21 states; (4) Five states required inservice training programs of three to nine semester hours or workshop attendance; and (5) Twelve states anticipated such future changes as more work experience, related work experience, graduate study, and work experience plus hours in industrial education as certification requirements.

Further information on home economics teacher education is provided in a research study by Purdue University. 13/ This study attempted to identify teaching behaviors which would indicate failure or success in the student teaching situation. It was found that college supervisors make an important contribution to student teaching, usually producing a desirable effect. However, further research is needed to discover ways of maximizing the contribution of college supervisors to the student teaching experience.

A short but pertinent article on business education teachers reveals that teachers of business education, who are frequently expected to teach economics, have received extremely inadequate preparation in the area. A survey of 23 member institutions of the National Association of Business Teacher Education elicited test scores on 180 graduating seniors, and indicated that their understanding of economics was about the same as that of high school students who had completed one semester of economics. 14/ Obviously if business education teachers are to be responsible for teaching economics, they must receive more thorough training than they have in the past.

The report focuses on teachers in isolated circumstances in Colorado. These techniques were found feasible and helpful for beginning teachers in terms of analyzing and changing their teaching behavior.

Two other valuable sources of information are the following: "Educational Institutions and the Supply of Occupational Education Teachers" in Regional Conference on Supply and Demand of Teachers of Occupational Education in the South which presents information on certification, changes in numbers of teacher education programs, legislation, and innovations; and the Annual Financial and Statistical reports of the state boards of vocational and technical education, available from the Bureau of Adult, Vocational and Technical Education (OE).[22] These reports include the current numbers of vocational teachers, counselors and directors; and usually present the status of teacher training programs (in- and preservice), enrollees in training programs, and estimated needs for teachers.

Two problems which appear to be receiving considerable attention are: (1) the necessity of work experience for vocational teachers, and (2) the best methods for assisting particularly trade and industrial teachers in keeping abreast of changes and developments in their area of specialty.

Not all states require work (or related) experience for certification. Yet Evans found that a primary difference between effective and ineffective teachers was that effective teachers had actual work experience. This is obviously a problem which must be solved through a cooperative effort involving teacher education institutions, local school systems, and the community, especially trade unions and prospective employers.

For effective trade and industrial teachers, more is needed than simply updating current education course content. Provision for continuing inservice training would be of value. Also, a policy by school systems of encouraging these teachers to enroll in training courses offered by manufacturers and distributors by giving some form of credit, reimbursement, etc., would assist teachers in increasing their knowledge of current developments in the field.

C. Teachers for Special Education

The obtaining of adequately trained and appropriately certified special education teachers is a major problem shared by school systems in all areas of the country. There were an estimated 5,224,705 school age children in need of special services for 1968-69, of which only 1.9 million were receiving services from 83,859 teachers. An additional 3.3 million handicapped children required but did not receive services. An estimated 225,466 additional teachers would be necessary to extend these services. Additional requirements are separately listed for teachers of the emotionally disturbed, (115,895) the mentally retarded, (50,703) specific learning disabilities, (25,170) the hard of hearing (12,060) and other categories. 23/ A 1968 survey of certification officers in the 50 states and the District of Columbia 24/indicated that eight states have no requirements for teachers of emotionally disturbed children and seven required no preparation beyond elementary and secondary education programs. A survey in 13 Western states found that a significant percentage of the 23,700 special education personnel studied had not completed full preparation programs in the specialty. 25/In 1968, the Legislative Committee of the Association of Children with Learning Disabilities conducted a survey of certification requirements which revealed that 12 states gave certification under the general heading "learning disabilities" without specifying particular learning problems. 26/

Although a tremendous gain in numbers of trained teachers occurred between 1954 and 1964 in the region (911 to 9,287), the teacher manpower supply is inadequate, with only about 19% of exceptional children in the South with needs receiving special education services. A contributory cause to the deficiency is the unmet need for additional college faculty, which, although showing an increase in the ten-year period (1954-1964) from 54 to 266, remains insufficient. The estimated 1968-69 need is nearly twice the number currently available. A special problem faced by the South, competition with wealthier sections of the country, further complicates the situation. 27/

At the same time, it was found that existing programs of teacher preparation for special education are not operating at maximum capacity, nor are they providing the quality training needed. Approximately 33% of special education teachers need additional training. Thus, at least in the South, the problem of adequate education for special teachers is confounded by less than optimum use of existing personnel and facilities in training institutions. It implies a necessity for developing minimum standards for local special education programs as part of regional criteria for accreditation.

An Arizona project, called the Duo-Specialist Project, provides local teachers with training in two of four areas (guidance, reading, special education and library) most needed by the local systems. Forty-one such

duo- specialists were trained and 40 teacher interns from universities were certified under the program. Holmberg examines the feasibility of a similar program to encompass the four-state area of Arizona, New Mexico, Utah, and Nevada. 28/ This comprehensive program would service specifically emotionally disturbed children in an area in which services are minimal.

A study was conducted of the effects of school training on the development of social competency of trainable mentally retarded children. It disclosed that two-thirds of the teachers felt their preparation was inadequate (partially because teacher programs focus on educable rather than trainable children) and that their supervisors had insufficient experience with children. 29/ These disclosures, although the study involved only Oregon and California, suggest a definite need for improvements in teacher training and supervisory preparation.

A potential source of teacher manpower for educable mentally retarded children is the teacher desiring to attain certification in special education. The inservice training program at the University of Maryland attempted to tap this source by providing a formal sequence of course work integrated with teaching experience. 30/

An Office of Education funded inservice project in Iowa for teachers of the mentally retarded utilized master teachers as inservice educators with apparent success. This appeared to be a most useful solution to the short supply of special education teachers. The teachers involved in the program were, at the time of training, currently teaching special classes. Thus the training was designed primarily to assist teachers in solving problems in methods, materials, or content selection. Approximately 90% of all special class teachers in Iowa participated in the sessions. 31/

One of the more comprehensive programs of training was co-sponsored by Syracuse University and the National Institute for Mental Health. It provided graduate training for selected teachers of brain-injured children. After the completion of the one year program the teachers returned to their schools. Follow-up studies found that the teachers' opportunities to utilize the special training frequently depended on administrators' interests and abilities. 32/

In addition to teaching techniques, diagnostic techniques are of importance, particularly if a teacher is to provide the tutorial technique most conducive to student achievement. Through the Learning Center in Binghamtom, New York, 20 public and private schools in Broome and Tioga Counties funded a program to prepare teachers to work with severely underachieving students. A primary focus of this program was the acquisition of effective diagnostic techniques. 33/

The innovative programs described above represent attempts to alleviate the shortage of adequately trained special education personnel by either further training of special education teachers or the training of regular class teachers to teach special students. However, these methods alone cannot be expected to suffice. Effective utilization of present training facilities and trainers and substantial increase in the number of programs and faculties is urgently

needed. The Southern Regional Education Board's comprehensive analysis is unique. Similar studies should be conducted in other regions to yield valid national data and to provide a solid base of information to determine needs.

As noted by Johnson in a Michigan survey, 34/ there is apparently a current trend on the part of colleges and universities to place greater value on graduate programs while simultaneously phasing out undergraduate programs. These disturbing findings indicate a need to determine if this situation is occuring in areas other than Michigan. Since Johnson found no data to support the premise that BA programs produce less effective teachers, this trend is particularly questionable in view of the fact that there is a current shortage of special teachers.

A second problem of training is the one briefly mentioned in the Cain/Levine study, 35/ i.e., teachers felt inadequately prepared to teach trainable mentally retarded students, since the programs in which they were trained focused on the educable retarded. Further research is needed to determine the appropriateness of teacher training and placement and the degree of specialization of training programs. This in turn postulates a need for specific and uniform certification (national rather than state); and the cessation of a situation where 12 states issue certification under the heading "learning disabilities."

D. Teachers for Pre-School Children

Substantial unfilled demand is indicated for teachers of pre-school children. It is asserted that if priorities and funds are allocated for this area, thousands of additional teachers will be necessary, and the tremendous excess of teachers over demand forecast for the seventies will be reduced significantly, but by an unstated amount.

It should be noted that several alternative strategies to conduct pre-school training for children of mothers on welfare are already being advanced. Although these would require the addition of thousands of teachers, they would not be recruited from among the teacher education graduates as the primary source. Day care centers would be opened up so that welfare mothers could pursue productive careers while their children were placed in learning environments. Since it will be difficult to find productive employment for most mothers now dependent on welfare, some of them will be recruited and trained to occupy the teaching jobs for the children of mothers on welfare, or so the concept goes. The policy implications here suggest a possible conflict between the goals of obtaining jobs for welfare mothers, obtaining the best teachers for the pre-school child, and obtaining jobs for graduates qualified to teach but unemployed. It is suggested that while it is still too early to foresee how the conflict will be resolved, political pressures will be strong to find jobs for welfare mothers in this area. However, a large residual demand is still claimed for pre-school children not attending school whose parents are not on welfare. This area of demand requires more effective identification and realistic planning, overall and by state and community, before its impact upon effective teacher demand for the seventies may be determined.

Although early childhood education is receiving increasing attention from educators, legislators, and the general public, there are no formal standards, goals, and regulations established for effective, quality education for the pre-school child.

According to NCES 36/ there were, in 1969, 3,949,000 three to five-year olds enrolled in public and nonpublic preprimary programs from a total population of 11,424,000. Of this number, 21.7% were enrolled in prekindergarten programs and 78.3% in kindergarten programs. These figures indicate that approximately two-thirds of the three to five-year old population are not being served.

Omitting kindergarten, which is usually incorporated into the regular school system as the beginning level, there are three main types of preprimary facilities: (1) nursery schools, (2) day care centers, and (3) Head Start Programs or other facilities aimed at serving a specific population.

Nursery Schools - The Research Division of NEA defines a nursery school as "an educational enterprise for the year or years preceding kindergarten,

organized and maintained as part of the sequential program of the public elementary school and under the direction of a qualified teacher. Instruction is an integral phase of its program of child development." 37/

Although nursery schools are also operated by private groups, parent-cooperatives, laboratory schools, and so forth, this study focuses on public nurseries as defined above. Nursery schools were operated by 148 schools systems (300+ enrollment) in the U. S. with 141 of these systems supplying information to the NEA. Of these systems, 134 reported 1,256 classroom teachers. The report does not present state standards for teacher certification, educational requirements, etc., but does give this information by system. Thus, 79 systems or 56.0% required a certificate for pre-school, early elementary or kindergarten-primary education, and 51 (36.2%) required a standard elementary certificate. The most frequently reported minimum educational requirement was the BA with a major in pre-school, early elementary, or kindergarten-primary education (44%). Average class size (half and full day sessions) was 17.5 pupils, with a total of 31,079 pupils enrolled.

Day Care Centers - A Study in Child Care, 38/ sponsored by the Office of Economic Opportunity, presents a detailed description of 20 day care centers located throughout the country. The selection appears sufficiently diverse to give a generally representative example of such centers. These 20 facilities included private nonprofit, private profit, public, and Head Start affiliates. Admission criteria were set to include children from both poverty and non poverty backgrounds. The centers served a variety of ethnic groups with the largest number of children being black. In contrast, however, blacks were considerably under-represented on staffs. The study did not attempt to provide a comprehensive picture of all day care centers. However, the detailed attention given to the 20 selected centers should be an invaluable model for future day care planning.

Volume III examines issues of cost and quality in the day care centers, including staff deployment and characteristics. Pupil/staff ratios (teachers/pupil, nonteacher/pupil ratios) varied considerably in each of the centers studied. The centers had from three to eleven children per staff member and from four to sixteen children per teacher.

A major problem for day care centers in obtaining adequate staff is the varied standards and licensing procedures of local municipalities and states. The study found that how a center hires and trains its staff depends on: (1) how the facility is defined, (2) which jurisdictions have regulatory codes, and (3) what the regulations are for the source of funds. An interesting finding which should be seriously considered in any attempt to establish day care on a state, regional or national level, is the diverse educational backgrounds of the staff. In one center, none of the teachers had college training. In another, all of them had some college experience. However, usually 32% to 100% of the staff did have some college background. The study concludes that

a quality staff does not presuppose the necessity of a high proportion of members with formal education.

The use of teenagers and elderly persons as teaching assistants is also significant as an attempt to (1) provide work experience for a specific segment of the population, and (2) utilize a neglected source of manpower.

The examination of cost breakdowns in center operation provides a useful model for future day care planning and development. A typical budget with an estimated total cost per child per year of $2,189 would show the following breakdown of expenditures and percentages of the total for each child: (1) care and teaching - $1,232 per child, 56% of the total budget: (2) administration - $435, 20%; (3) feeding - $212, 10%; (4) health - $33, 1%; (5) occupancy - $277, 13%. These figures were computed on the basis of 8.4 hours per child per day for 75 children for 250 days. A more detailed budget is also presented. The following areas are some of those examined for cost in terms of extended service: (1) Nutrition (including eligibility for food subsidies and surplus food); (2) Health Services (in addition to general medical, this also includes special testing, dental, psychological, and services for the handicapped); (3) Transportation; (4) Counseling, and (5) Social Services.

The problem of credentials and certification is examined in an Office of Education study of March, 1969. 39/ Here it is emphasized that the variety of regional and local regulations makes it difficult to determine patterns of certification and credentialing. The study also notes a lack of descriptive background information on pre-school teachers futher complicated by the fact that neither the Association for Childhood Education International nor the National Association for the Education of Young Children requests such information from their members. However, the Federal Panel on Early Childhood Education, established in 1968, is expected to alleviate this situation by guiding the development of day care and pre-school programs receiving Federal funds.

The preceding studies, particularly the NEA survey and the day care study, are primary sources of reasonably accessible information. However, there are also other reports and studies which have made significant contributions to the "information pool" on early childhood education, and are summarized below.

An evaluative report from the University of Illinois 40/ presents valuable statistics on teachers, paraprofessionals, other professional staff, teacher/pupil ratios, and examines environmental conditions, needs, and costs. However, early childhood education is not the primary focus of the study, which also includes basic elementary and secondary education.

An early elementary education survey funded by the Office of Education [41] describes services provided by public schools (enrollment 299+) for children under age six. Included are: organizational patterns, pupil-staff ratios, and teacher qualifications from a sample of 2,603 school districts.

Head Start Projects - In 1966-67 the NEA surveyed a sample of public schools involved in Head Start Projects, the results of which are available in Research Report 1968-R3. [42] Some form of staff institute, seminar, or training program was conducted by 97.4% of the surveyed systems operating Head Start and by 61.3% of systems participating in Head Start Projects. The most frequent purpose of these programs was either to focus on staff problems (34% of the participating systems, 54% of the operating systems) or to improve staff skills (33.5% of participating systems, 53.2% of operating systems). The largest percentage of systems staffed their programs with both paid and volunteer aides (45.6% of participating systems, 72.5% of operating systems).

Median and mean cost per pupil of full year Head Start programs were $840.68 and $827.24 respectively. However, on a national average, basic summer program costs are about $200 per child and full year programs about $1,100 per child. A combination of local and federal funds was the major funding source for 42.6% of systems participating in the Head Start programs and for 67.6% of systems operating Head Start programs.

The results of the survey indicate that most of the services provided by a day care center are also provided by Head Start (i.e., medical, transportation, special services, etc.).

An evaluation of the Head Start program was undertaken by the Westinghouse Learning Corporation and Ohio University pursuant to an OEO contract. [43] Primarily, the study (a random sample of programs and children) presents substantiated reasons for sustaining and developing the Head Start programs on the basis of the programs' effects on the cognitive and affective development of children it has serviced. However, educational personnel were not the focus of the study and limited information on staffing is provided. Teacher/child ratios were 1:15 in approximately 50% of the centers and from 1:17 to 1:20 in another 35% of the centers. Nine or more different types of professional staff members were available in about one-third of the centers, while another third had six or fewer professionals. Employment of non-professionals varied from 1 to 4 in one-third of the centers, 5 in one-third, and 6 to 9 in another one-third.

Under the auspices of the University of Texas, [44] 1,000 potential Head Start teachers were measured during training and orientation to determine their attitudes toward child behavior and optimism toward the program. It was found that teachers having personal experience with the environments of the children:

(1) identified more with the Head Start programs; (2) showed more empathy for and eagerness to work with the children, and (3) held more optimistic attitudes toward program results. Thus the findings of this study have considerable implications for maximum effectiveness in Head Start teacher selection and placement.

The above studies are not only examples of the research being done in the field of early childhood education, they also indicate an increasing concern for the provision of quality education for pre-school children. With women entering the work force in increasing numbers, the need for adequate, inexpensive day care for under-school-age children can be expected to grow. However, there remains a paucity of data and information on the qualifications of teachers and a considerable need for uniform regulations and standards applicable to all early childhood facilities and teachers. In particular, those centers operating outside the jurisdiction of the public schools exhibit considerable variation in standards and regulations.

If quality day care is to be made available to all children needing such services, the desirability of uniform national and/or state and regional accreditation, certification, and regulations should be considered. As shown by both the Westinghouse/Ohio U. study and A Study in Child Care, excellent and effective services need not be exorbitantly expensive nor require a highly educated staff. The establishment of local centers utilizing available, indigenous manpower (especially teenagers and elderly individuals), with adequate in-service staff training, and conforming to definite standards and regulations, can contribute to adequate care for pre-school children.

E. Other

The need for additional skilled bilingual teachers is frequently mentioned in the literature. Objectives of a bilingual program include having the child achieve satisfactory learning progress in all subjects; developing proficiency in the skills of both English and Spanish and giving the child personal adjustment in the environment of the two cultures. The lack of qualified teachers and materials is cited as an obstacle to the successful achievement of program objectives. Although no adequate discussion of statistical methodology used is presented, one study states that 100,000 bilingual teachers are needed. 45/

To meet the need, New York City assigned 529 eligible candidates to a bilingual training project. The project is described, and the evaluators found it successful and recommended its continuation. The project was funded by the U.S. Office of Education. The report provides detailed information on recruiting techniques and training procedures. 46/

There were 1,091 Junior Colleges, public and private, in the United States with an enrollment of 2½ million students served by a faculty of 109,345 persons for the 1970-71 school year. 47/ Junior colleges have had a very rapid growth, increasing in enrollments almost fourfold between 1960 and 1970.48/ Although tapering off in the rate of increase, the growth of community college enrollment and faculty is expected to continue through the seventies. Education graduates with specialized backgrounds for secondary and post-secondary education with MA's and BA's do and could fill some portion of this need. In view of the surplus, perhaps the Junior Colleges could be looked upon as an important source of demand and placement for graduates prepared to teach. However, no valid projections are made of requirements for teachers and of current and prospective vacancies by subject matter, by state and by location, as was described above as being done for the career education field. This represents a significant data gap in an important and growing area. An automatic data processing reporting system with an associated job bank, matching prospective applicants with jobs, would represent a constructive strategy to fill this need.

V. PRESERVICE TEACHER TRAINING

V. PRESERVICE TEACHER TRAINING

According to the National Education Association, there were 282,192 college graduates who had received bachelor's or master's degrees in 1970 and were prepared to teach on either the elementary or secondary level. This was more than a 10% increase over the number for 1969. On the elementary school level there were 102,175 teacher education graduates with bachelor's degrees and 12,215 with master's degrees in 1970. For the secondary school level, these figures were 149,400 and 18,402 respectively. In categories cited as being in short supply, the estimated number of college graduates trained to teach in 1970 were as follows: (1) industrial arts, 5,190; (2) science, 12,231; and (3) mathematics, 12,093. For trade and industry, there were 5,190 college students completing bachelor's and master's degrees.1/

NCES projections to 1979-80 include demand figures for instructional personnel and enrollments in institutions of higher education. These projections are given by institutional control, sex and attendance status, but are not broken down by instructional area. The total enrollment in four-year, degree-credit programs is expected to increase from 5,902,000 in 1969 to 8,699,000 in 1979. However, similar data on education students are not presented. Instructional staff to serve the needs of these students in institutions of higher education is expected to increase from 493,000 in 1969-70 to 701,000 in 1979-80. Again, there is no breakdown to indicate the numbers of professional staff needed for teacher education programs.2/

Of particular concern is the quality of training received by teacher education students and graduates; whether they are adequately prepared and highly motivated by the educational experience. Recommendations for, and evaluations of training programs, have been prepared by numerous states. Among these are the following: A report on teacher education in Connecticut includes both recommendations for optimal programs and evaluative criteria for these programs.3/ Feasibility studies of model teacher education programs in Ohio, Massachusetts, and Georgia provide cost analysis, evaluative procedures, assessments of needs, and performance criteria.4/

The American Association of Colleges for Teacher Education has completed guides to some of the model education programs, specifically those developed in Florida, Massachusetts and the University of Pittsburgh.5/

Syracuse University developed in 1968 a comprehensive education program for elementary teachers designed to be adaptable by a variety of institutions. This model describes: (1) specific descriptions of the liberal arts component and (2) child development and teaching theory and practice components. The various components include prerequisites, estimated time and objectives. Of particular note is the self-directed components comprising individualized instruction and educational technology. The University has also provided a feasibility study of the refined specifications of the program.6/

A 1970 Symposium enabled secondary teachers to evaluate their training after three to five years in the classroom. This Symposium has yielded signi-

ficant indications of the quality of teacher training and recommendations for future education programs. These teachers felt their training did not prepare them to (1) handle special problems of teenagers, and (2) utilize innovative techniques. Recommendations included (1) teaching opportunities in the freshman year, (2) more active participation of high school principals and teachers in students preparation to teach, (3) contact with high school students in both teaching and non-teaching situations, and (4) special training in certain fields, including recent developments.7/

Other suggestions for teacher education program development are offered in the Florida Experiment. Instituted on an experimental basis, the program was designed to fulfill certain needs of education students at the University of Florida. These included: (1) earlier and more varied experiences with children, and (2) a wider variety of experiences and development of experimentalist orientation. The resulting lower attrition rate of education students was a measure of the program's success.8/

An experiment at Brigham Young University produced evidence that students taught by a "continuous progress" method scored significantly higher when tested than students taught in the traditional lecture-discussion class. This "continuous progress" method provides objectives, assignments, guides, and introductory readings, but then permits the student to work more on his own, and at his personal rate of progress.9/

The attitudes of elementary teachers towards mathematics was the focus of a study aimed at changing these attitudes and determining the relationship between attitudes toward, and achievement in, mathematics. Through the study of "enrichment problems" it was found that attitudes became more positive and achievement increased.10/

At the Oregon College of Education two approaches toward teacher preparation were studied for their effectiveness--the Block program and the traditional program. The Block program where eudcation students had more direct pupil contact and involvement in instruction was significantly more effective than the traditional program which consists of less contact and more observation.11/

Although these studies cover various aspects of teacher training, the primary conclusion to be drawn from them is that effective teacher preparation should involve the education student in more actual teaching situations in varying environments. And second, these experiences need not begin as they traditionally do at the final stage of the training program. In fact, they can and should begin much earlier. This would then permit the student to determine early in his college career whether or not he wishes to pursue teaching as a profession, and which area of the profession his temperment and abilities are best suited for. It would also enable supervisors, instructors, etc., to evaluate the student's potential as a teacher. In effect, it would institute a "screening process" which, by being initiated early in the training process, would not detrimentally affect the student's opportunity to enjoy the full benefits of higher education and his career plans. The value of early teaching experience in conjunction with "screening" is enhanced when the problem

of teacher over-supply (particularly in certain subject areas) is considered.

The following studies examine in greater depth the problems, methods, and developments in student teaching or internship.

Student Teaching. One of the most important and crucial aspects of the education student's experience is the internship or student teaching experience. However, there is no uniform approach to student teaching and programs vary considerably among different states and institutions. A 1967-68 study examines these differences in 25 selected colleges and universities in four states -- Illinois, Michigan, Minnesota, and Wisconsin. Some of these variations were: (1) length of the student teaching experience (ranging from 6 to 18 weeks), (2) hours per day of student teaching (3 to 8), and (3) number of student teachers per college or university supervisor (ranging from 5 to 25 with an average of 16). 12/

This lack of uniformity in the student teaching experience is further supported by a survey undertaken by the American Association of School Administrators. The Association surveyed 402 school systems with 12,000+ enrollment and discovered that: (1) most of these systems are involved in the training of prospective teachers and (2) little uniformity exists.13/

A pilot center to provide higher quality student teaching experience was formed in West Virginia with the cooperation of five teacher education institutions, one county school system, and the State Department of Education. At its beginning, the project had 26 students assigned to the same number of supervising teachers in 12 schools. The student teaching was of nine weeks' (full day) duration. Primarily the project developed an administrative framework which could effectively combine available resources and utilize the best talent within the cooperating agencies for supervision, consultation, and feedback.14/

Another attempt to upgrade teacher internship which was favorably received by both teachers and students, focused on the supervisory (or cooperating) teachers. This "new model" was an attempt to modify the role of supervising teachers by increasing their responsibilities and providing special in-service training programs for them. College supervisors performed less supervision and observation; instead they served as consultants, conducted seminars for both supervising teachers and education students, and provided knowledge and skills in such areas as behavioral objectives, interaction analysis, etc.15/

The need for more uniform certification requirements is generally acknowledged. If greater uniformity is to come about, it is also necessary to give some thought to more uniform education programs. Although general course content is an area in which courses are varied and flexible, it is particularly important that guidelines and some uniformity be established for the internship programs. This in turn could lead to greater ease in establishing standard, across-state certification.

Student Teaching Behaviors and Special Techniques. In addition to projects or programs for generally upgrading the student teaching experience, there have been special projects, research, etc. on the behavior and behavior modification of student teachers in the classroom setting. Under the auspices of the USOE Cooperative Research Branch, a study was made to determine the effectiveness of simulation training as a method of presenting critical teaching problems and its effect on student teaching behavior. Student reactions to simulations were favorable but effects were not clear cut.16/

For a study of the multi-dimensionality of teaching behaviors, 40 secondary and 22 elementary student teachers were observed. The results indicated that behaviors were quite similar to those of the traditional classroom and were lacking the variety of behaviors included in the on-campus training programs. 17/

A survey of 442 teacher education institutions (NCATE accredited) revealed that 176 used microteaching. Of the 141 institutions answering a comprehensive questionnaire, 72% used microteaching in the general methods course, 43% in the subject methods course, and 18% in student teaching. Many respondents indicated that microteaching resulted in improved attitudes toward education and increased teaching ability.18/

There is a fairly detailed description of microteaching at Brigham Young University in which the "Micro" session is videotaped and played back after which a "Reteach" session is arranged and also taped. Of the trainees, 96% felt they benefited from microteaching.19/

The use of interaction analysis is also gaining favor in many teacher education institutions as a means of achieving desirable teaching behaviors. At the University of South Florida, the effects of interaction analysis on student teachers' verbal behaviors were observed. It was found that the experimental group (those receiving feedback from the systematic observations) used more student initiated talk, more praise and more extended use of student ideas than the control group.20/

The categories of the Flanders Interaction Analysis system and other techniques such as microteaching and simulation can and are used in conjunction with one another. These methods have all met with varying degrees of success; each having a positive effect in terms of altering teaching behaviors and introducing new, more effective classroom techniques. The advantages of these techniques are: (1) the opportunity of learning teaching methods in a limited classroom situation (microteaching), (2) analysis of the effects of various teaching behaviors and the verbal interactions of students and teachers (interaction analysis), and (3) the opportunity of examining in retrospect those behaviors/methods most and least effective (videotaping). Thus, the prospective teacher is not simply thrust into a public school classroom and then supervised by college supervisors and cooperating teachers. Rather, the student begins in the smaller more controlled environment and gradually learns, by observing his own performance, those methods most conducive to an optimal learning environment.

VI. INSERVICE TEACHER TRAINING

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The following studies are particularly relevant to graduate level training. Eight-two percent of 247 institutions responded to a 1964 survey of the Council of Graduate Schools. The following information was elicited: (1) 38 offered 6th year programs, (2) 50% responded that a majority of course requirements could be met in subject areas other than education, and (3) the primary purpose of all programs was to prepare school personnel in areas of specialization. It can be assumed that the numbers of these programs have increased since 1964.1/

As indicated from a 1968 NEA survey of 1,199 school systems with 6,000+ enrollment, some systems have professional growth requirements for salary increments. Acceptable ways of fulfilling these requirements include: (1) taking college courses, (2) approved travel, (3) inservice training, (4) professional activities, (5) outside work experience, and (6) research. Approved travel and inservice training were the most frequently mentioned. However, college courses were most often the acceptable method of professional growth for salary increases. Occasionally the MA was cited as necessary at some point in the teacher's career.2/

The question of whether the MA is a reasonable and necessary requirement for salary increase was the subject of research done by Burbank Unified School District in 1965 and requires further evaluation. Extensive research resulted in the conclusion that there is little empirical evidence in favor of a the MA degree requirement.3/ In view of the general pursuit of advanced degrees by educators, the policy and program implications of this finding merit further attention.

The problem which arises from a perusal of these studies is how to encourage continued professional growth. Although possession of a master's degree is not a certain indicator of greater teaching ability, continuing education for teachers is necessary to meet changing needs and demands and to keep abreast of new developments. Particularly this is true for (1) teachers of trade and industrial courses, (2) teachers of the culturally disadvantaged whose undergraduate backgrounds have not provided them with adequate knowledge of other ethnic/cultural groups, and (3) for the understanding of, and use by all teachers of innovative methods and materials including educational technology. The following reports resulting from state and regional surveys indicate teacher-expressed needs and current school system practices.

In a mid-west survey, it was found that workshops, consultant services and visits to other schools were effective inservice techniques. However, programs were restricted by limited budgets. Two important recommendations were (1) a budget of $50-$150 per teacher, and (2) a full-time coordinator for the program.4/ The problem of budget was also examined in a University of Iowa study. Here it was found that teachers felt their chief requirement for inservice training was to improve teaching skills.5/

An NEA Research Summary on inservice education discusses the various forms such programs may take and offers limited statistical information. Although academic study continues in importance, there is an increasing demand for and

implementation of other activities. The National Commission on Teacher Education and Professional Standards (NEA) suggests the following activities as ways to stimulate inservice growth: (1) group study; (2) summer study; (3) community activity; (4) school visitations; (5) travel, and (6) participation in professional associations. NEA suggests that teachers be free to accept or reject any inservice program which may be proposed. In addition, problems of scheduling and time to pursue inservice training are examined. A report on opportunities for professional growth showed that in 1961-62: 1,044 (85% of the urban districts included in the survey) provided curriculum activities, 970 (79%) provided workshops, and 761 (62%) provided university extension courses. Leaves of absence for professional growth were given by many systems. In 1965-66 such leaves were granted by 94.4% of 12,130 systems (300+ enrollment) for attendance at professional meetings. Leaves for professional study were granted by 38.7% and paid sabbaticals by 18.7%.6/ No statistics are given on the numbers of teachers involved in these various programs, nor were teachers surveyed for their attitudes toward inservice programs generally and those programs they considered most beneficial.

The following three studies give some indication of the effectiveness of inservice programs and their importance in shaping teacher behaviors and attitudes. The effects of reduced teaching loads in combination with intensive inservice training were determined by studying and comparing two groups of new graduates assigned to schools. The experimental group (reduced loads and in-service training) showed significant changes compared to the control group (no special treatment). Teaching performance showed improvement although attitudes did not change significantly.7/

A five-week summer institute in the improvement of science teaching (sponsored by NSF) enjoyed similar success in terms of its effect on teachers. Nine areas of competency were measured with marked improvement indicated in each. Also teacher-pupil verbal interaction analysis indicated an improved classroom environment.8/

Science was the subject of Project IN-STEP in Palm Beach, Florida. Attitudes and achievement tests administered to teachers and their students revealed group gains on mean scores and favorable teacher attitudes.9/

The value of inservice education generally (and in two cases, science in particular) is supported by these studies. The results of reduced loads in addition to inservice training for the new teacher appear beneficial and deserve further study to determine the feasibility of more extensive implementation of this program. The major problems here are to provide relevant inservice education which can be incorporated into the teacher's schedule without depriving students of teacher-time, and to stimulate teacher participation. Salary increments, greater status, and recognition are the primary methods of encouraging teacher activity in this area. However, it is also crucial that the teacher feel the inservice training will ultimately benefit him, i.e., program offerings should be such that teachers are motivated to participate by reasons other than salary, status, etc. One way to induce such motivation is by permitting teachers to participate in the choice and planning of programs they feel will be most helpful for their professional growth, and improvement of student performance.

VII. THE TRAINING AND UTILIZATION OF PARAPROFESSIONALS

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The introduction of adults other than the professional teacher into the American schoolroom is a comparatively recent and, for many, a promising development. The use of the sub- or paraprofessional marks a trend not only in the educational field, but in other service fields such as health and social work where personnel shortages have been acute.

In education, during the fifties and sixties, professional personnel shortages argued for the development of the paraprofessional role. In addition, the special learning and communication needs of the disadvantaged child, the plight and the unrest of the undereducated in an increasingly automated society, plus the new resources available to the schools through OEO, MDTA, etc., led to the new careers movement -- essentially a design for the employment and training of persons, often poor, who lacked traditional educational certification requirements. 1/

According to a recent estimate approximately 200,000 teaching aides are currently employed by school districts throughout the country. 2/ There is a crucial issue raised here that has important policy and program planning implications. In view of the tremendous excess of graduate teachers forecast in relation to the demand for the seventies, is it desirable to introduce paraprofessionals into the system in such large numbers? For those who see in the current public school situation urgent need for substantial change, the answer is affirmative. The use of paraprofessionals is consonent with the movement toward "open classrooms," toward differentiated staffing patterns, and toward greater community involvement in the schools. As such, it "has gained momentum and more importantly, support from public schools, professional organizations, teacher training institutions, and civil service agencies." 3/ Both the American Federation of Teachers and the National Education Association have made policy statements supporting the use of preprofessionals in the schools. Both organizations agree that"preprofessionals" have made positive impact on education and are accepted as valuable members of the education team." 4/

Despite this growing acceptance, a survey of the literature related to paraprofessionals reveals a significant finding with regard to the training of teacher aides -- too often, such training appears to be either haphazard or random, or completely lacking. A 1968 Pennsylvania study 5/ points out that only 3% of all school districts in Pennsylvania were employing teacher aides, and of these districts, none had teacher aide training programs at the elementary level. Another 1968 study, based on a survey of principals, teachers, librarians, and teacher aides in 17 Texas Gulf Coast School Districts, 6/ concludes that although teacher aides can be utilized in instructional as well as noninstructional roles, preparation and preservice training for the aides is lacking. Further, a fairly extensive study of teacher aides in Missouri for the 1966-67 school year, 7/ emphasizes that the manner of recruitment, selection,

training, and utilization of aides was still haphazard. Specifically, with regard to training, the Missouri study noted that aide training programs were either undeveloped or nonexistent. Another, more recent study conducted in New York State (New York City excluded) disclosed that of all of the districts responding to a survey, only 25% provided a special training program for auxiliary personnel, and only 16.5% participated with other institutions and organizations in training programs for paraprofessionals. 8/

These findings suggest that the recommendations regarding the training of auxiliaries offered by Bowman and Klopf in their definitive study on auxiliary personnel in education are not being followed in the nation's public school system. This is especially significant since Bowman and Klopf contend that training is "the essential factor in the effective use of paraprofessionals, -- and employment without training appears to present many problems." Specific recommendations outlined by Bowman and Klopf which appear to require more systematic implementation in the public schools are the following: (1) that the training program "be planned cooperatively by school systems, institutions of higher learning, community action agencies, professional staff, and participants, (2) that both professionals and auxiliaries who are slated to work together in a classroom setting receive preservice training on a team basis, (3) that auxiliaries receive preservice training to develop communication and other concrete skills, (4) that auxiliaries continue to receive a comprehensive in-depth inservice program of development and supervision, (5) that professionals and auxiliaries continue to receive inservice training on a team basis, and (6) that programs at institutions of higher education be developed in order to provide the auxiliary with additional skills for upward movement on the career ladder". 9/

Several additional studies which emphasize that the specific Bowman and Klopf recommendations apparently are not being implemented in the public schools should be mentioned. A Washington, D. C. study on the use of indigenous nonprofessionals in the human service agencies, discusses the impact of the nonprofessional on the professional in a classroom setting. 10/ The study notes that one problem emerging from the introduction of aides into the classroom was the difficulty teachers encountered in reconciling demands for time required for aide supervision with that required for the learning needs of the class, and resultingly, the development of hostility toward the aide. One cannot help but surmise that this difficulty and resulting hostility could have been alleviated if a preservice training program for the teacher and the aide had been conducted on a team basis. This training appeared lacking, however.

Another study, conducted in South Carolina, empahsizes that of the teacher aides responding to a survey, 78% indicated that they did not have any preservice training by the district before being assigned to the classroom and 47% did not have any training by the district before or after being assigned to the classroom. 11/

A survey of the literature related to paraprofessionals reveals other significant findings with regard to the utilization of teacher aides. First, the teacher aide role appears to need definition, and effective utilization appears to be lacking. The study of teacher aides in 17 Texas Gulf Coast School Districts 12/ concludes that while teacher aides can be utilized in an instructional as well as in a noninstructional capacity, nonetheless, the role of the aide needs further definition. The Pennsylvania study, cited earlier, 13/ lends support to the lack of effective utilization of aides by pointing to the lack of interest of principals and disorganization of teachers. The Missouri study, also cited earlier, 14/ points out that the utilization of aides in Missouri school districts was "somewhat haphazard."

Second, the utilization of aides, in some cases, does not appear to release the teacher for more instruction-oriented or professional-types of activities. A case in point is the study of teacher aides in the metropolitan school district of Portland, Oregon. 15/ This study, based on extensive data analysis and observations of teacher aides and professionals, concluded that the nonprofessional teacher aide "produced much more instruction in the five hour class day than did teachers with or without aides." Specifically, the aides produced a mean 127 minutes of instruction per day compared with a mean 109 minutes for their supervising teachers. Further, the nonprofessionals performed less routine, clerical, noninstructional work per day than did the supervising teachers. In fact, they expended a mean 118 daily minutes on routine tasks compared to a mean 127 daily minutes by the supervising teachers.

The relatively recent and still developing Career Opportunities Program of the Bureau of Educational Personnel Development with its 132 projects in 50 states, Washington, D. C., and Puerto Rico, while it trains only a small fraction (under 10%) of all aides currently employed in the public school system, could provide a training model for other paraprofessional programs. However, evaluations of performance of students, the paraprofessionals and teachers using them would be essential to insure that the goals have been achieved.

VIII. CERTIFICATION

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The problem of certification is becoming increasingly important with certification based on performance representing newer aspects receiving great attention.

The American Association of Colleges for Teacher Education (AACTE) presents comprehensive data on certification for all education levels and for all degrees awarded from both AACTE member and non-members institutions. Data presentation is by state and by geographic region. Totals for 1967 are as follows: (1) BA--191,513 recipients eligible for initial certification, 4,143-kindergarten; 71,306-elementary; 1,203-junior high; 87,699-high school; 19,412-special teachers; (2) holders of the BA taking graduate credits to become eligible for initial certification--9,389; (3) MAT and other MA's--5,512 and 8,333 respectively, eligible for initial certification; (4) sixth year diplomas and certificates--2,459; and (5) PhD--3,426.1/

In a survey of certification requirements, the National Education Association reported that BA degrees were required by all states for beginning high school teachers, and by 47 states for beginning elementary teachers. Eighteen states required five year preparation for full certification.2/

As an example of a state statistical report on certification, the"Georgia Education Statistics"is noteworthy. The report presents data on the numbers of certificates issued to principals and teachers, years of college experience of recipients, and a system-by-system breakdown for teachers. In addition, there is a presentation of numbers of teachers certified and percents from 1945-56 to 1969-70. The number of certificates issued annually to teachers and principals has more than doubled during this time period (22,442 to 48,203). Since 1960-61, the increase has been from 34,104 to 48,203. There has been a significant decrease in the numbers of less-than-four-year certificates issued. For example, in 1960-61, 24,464 certificates were four-year, 2,478 were three-year, and 1,182 were two-year and less. However, in 1969-70, these figures were 37,728, 425, and 409 respectively. Correspondingly, there has been considerable increase in five- and six-year certificates -- from 5,905 to 8,380 for five-year and 75 to 1,222 for six year certificates.3/

Of primary importance are the types of certification standards and requirements teachers must meet. Although published in 1962, Conant's book, The Education of American Teachers, includes a noteworthy analysis of certification. At the time of publication, requirements and standards were changing; this is still the case at the present time. The author states "that certification requirements are not rigidly enforced" with issuance of emergency credentials justified by shortage of personnel. The conclusion drawn by Conant was that existing policies do not result in quality teaching. He found that state responsibility for all aspects of the teacher education program is a barrier to improvement, and recommended that the teacher education institutions assume greater responsibility for activities occurring in the college or university classroom. In turn, states would regulate the student teaching or internship phase of the

training experience. This "restricted state-approved program approach" was felt by Conant to be the most viable alternative to the problem of certification.4/

A "Critical Analysis" of Conant sets forth the five procedures Conant advocates for reform of teacher education/certification: (1) responsibility for certification to be placed on colleges and universities, (2) classroom performance to become the major certification factor, (3) local systems to assume a greater responsibility for on-the-job training, (4) state authorities to become mainly responsible for supervising practice teaching and on-the-job training, and (5) learning by teaching to replace methods courses. However, one of the primary barriers thwarting large scale implementation of these procedures and other innovative plans and ideas is the lack of generally accepted comprehensive criteria.5/

An example of an innovative procedure consistent in some respects with the first procedure in Conant's plan is that of Washington State. Here the power for developing teacher education curricula is placed in the colleges and universities, rather than the State Department of Education.6/

New York State Department of Education also recommends that standards which will eventually lead to competency-based certification should be developed by representatives of public schools, teacher education institutions, teachers, and teacher education students.7/

Competency-based certification is the subject of a report on standards in Washington State. This state's new certification regulations are based on four standards: (1) professional preparation to continue throughout the educator's career, (2) preparation agencies to include not only colleges and universities but also school organizations and professional associations, (3) performance in relation to defined objectives to be the basis of preparation, and (4) teacher preparation and career development to be individualized.8/

The search for effective criteria and standards for certification to achieve quality teacher education has led to the concept of performance-based certification and performance-based teacher education. The problem of where the focus of performance-based certification should be was discussed at a conference in Miami, Florida. A report resulting from this conference concludes that the focus must be on the products of teacher behavior in terms of student outcomes and other defined objectives as opposed to simple teacher behavior. It was felt that this focus would: (1) allow for variations of teaching style, (2) demand clear goals on the part of the education system generally, and (3) be valuable as a way of removing "guess work" from the hiring process.9/

The relationship between performance-based certification and performance-based teacher education is examined in a study published by the American Association of Colleges for Teacher Education.10/ Teacher education is discussed in detail in terms of curricula in a University of Georgia study. The performance specifications listed in this study describe competencies or competency requirements which teachers should possess for maximum effectiveness. Desired behaviors (224) are classified and 80 specifications containing selected personality characteristics are also presented.11/

There are a number of studies which present certification requirements and/or qualifications needed for teachers in special subject areas. An Office of Education sponsored study has made available a state-by-state presentation of certification requirements for teachers of modern foreign languages and includes credit and hour requirements for certification at the elementary and secondary levels and for supervisor or coordinator certification. 12/

Although it does not focus on certification, a study of bilingual education also gives qualifications for teachers of modern foreign languages along with demographic data on speakers of languages other than English.13/

A report concerned with the certification of secondary school mathematics teachers presents descriptive information of their certification on a national basis. This information includes minimal numbers of hours required and certification requirements generally. Current practices in New York and recommendations from mathematicians and mathematics teachers are discussed.14/

A national survey (including the District of Columbia and Puerto Rico) of state certification of reading teachers and specialists found that: (1) 25 agencies required certification for reading specialists, (2) special training was not required for teachers or supervisors of reading classes or programs, (3) eight reading certification credentials met the standards of the International Reading Association.15/

Focusing on the academic subject areas generally and English in particular, Donald R. Tuttle examines certification practices, educational preparation, and teacher misassignment in two articles. He discusses the positive effects of NDEA and emphasizes the imbalance in preparation of English teachers vs. teachers of nonacademic subjects. As an example, Ohio statistics are cited showing that although (with few exceptions) home economics and industrial arts teachers must earn at least 24 semester hours in their fields for certification, the majority of English, Chemistry, and French teachers earned less than 24. The National Council of Teachers of English estimates that 40-60% of English teachers are not adequately prepared. The author also blames poor certification requirements and preparation practices, and the resulting administrative confusion in hiring, for the misassignment of teachers and teacher selection problems.16/

The lack of generally accepted standards as a basis for the planning of teacher certification and teacher education related thereto is supported by the findings of various surveys of state requirements. Although this article is concerned more with teacher education, it is also significant in terms of certification, regarding certification and training as inseparable parts of the same process - the production of effective teachers.

The development of quality criteria appears to be the first necessary step toward the establishment of uniform certification requirements. The need for specialists in particular areas, and the apparent growing increase of teaching specialists, indicate a need for certification standards relating to specific subject areas.

IX. TEACHERS OF THE DISADVANTAGED

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Staff by Racial and Ethnic Group. Baseline statistics, Fall, 1970 1/ give the following numbers and percentages, indicating minority teachers are under-represented in proportion to the numbers of minority students. The data (universe projections) for public elementary and secondary schools are as follows: (1) total number of teachers, 1,922,171; total minority teachers, 208,355; and (2) total students, 44,910,421; total minority students, 9,394,185. Thus, while minority students comprise 20.9% of the total student population, minority teachers are only 10.8% of the total teacher population.

The largest minority group is black--14.9% followed by Spanish-American--5.1%. The percentages of black and Spanish-American teachers are 9.4% and 1.0% respectively.

Studies dealing with the problems of civil rights in the United States school system generally focus on these two groups. However, other reports, reviews, etc., often deal with the training and orientation of teachers and administrators (regardless of ethnic group) to handle problems related to the education and integration of minority students in the public school. As noted in the Report of the National Advisory Committee on Civil Disorders, 2/ the quality of education in minority area schools, with respect to teachers, is scarcely adequate. Teachers are generally less experienced and have fewer qualifications than their counterparts in more prosperous, non-minority areas.

Effects of Desegregation on Black Teachers. The special problems of black teachers affected by desegregation are dealt with in a study by Baxter of displaced Negro teachers in Arkansas.3/ It was found that displacement increased as desegregation increased with race the major factor. Neither academic training nor the rating of the colleges from which these teachers earned degrees was a significant factor in displacement. In addition, it was found that retained teachers were either assigned to "short contract positions" in desegregated schools, or assigned to schools which remained all black. The author concludes that large numbers of teachers whose experience and training qualified them for leadership positions in school districts most needing their abilities were displaced from these same districts.

This particular aspect of desegregation (i.e., displacement of black educators) has been given extensive coverage in Equal Educational Opportunity--1971, Hearings Before the Select Committee on Equal Educational Opportunity of the United States Senate, Part 10-Displacement and Present Status of Black School Principals in Desegregated School Districts.4/ Utilizing statistics reported by the school districts to HEW, the report presents conclusive evidence that in numerous systems, desegregation has resulted in displacement of black educators and racial discrimination in the filling of vacancies. Reporting districts were located in the following states: Alabama, Florida, Georgia, Louisiana, Mississippi, and Texas. Between 1968 and 1970 these districts reduced the number of black teachers by 1,072 while increasing the number of white teachers by 5,575. This reduction of the number of black school teachers was not concentrated in only certain districts. On the contrary, it appears to be wide-spread; a general

policy throughout these states. Half of the districts reported 5%+ reductions of black staff with nearly one-third reduced by 15% or more in the two-year period, 1968-1970. This report of the hearings presented statistics and analyses for each district and state. It covers also the displacement of black principals, and contains testimony of many witnesses before the Committee on Equal Educational Opportunity.

According to a New York Times article of December 23, 1971, 5/ graduate studies, funded by the Federal government, are one way of increasing job security for black teachers. Frequently, these teachers receive their undergraduate training in black colleges. Many of the teachers interviewed felt their preparation was inadequate. Although this may appear to contradict Baxter's conclusions referred to previously, undoubtedly both are correct -- some displaced black teachers are adequately trained with considerable experience, while others have deficient backgrounds. What is notable, is that in the past, when these teachers were taught in all black schools, there was no special concern about the quality of their preparation. Now, in newly desegregated schools, a reason given for their displacement is their inferior training. By pursuing graduate level work presumably this particular reason for discriminatory hiring practices will be overcome. This is a needed and promising means of altering the current pattern of black teacher displacement. The program has been limited in scope, affecting only 175 men and women teachers, not nearly enough to achieve the desired equity.

Inservice Training as Part of Desegregation Plans. Effective desegregation entails more than an adjustment of racial balance in a given school, school system, state, etc. It must also include long-range plans for instructional and non-instructional staffing, facilities, compensatory education, and some provision for staff instruction, either inservice, preservice, or both for teachers and administrators. Ideally the purpose of such training should be for both changing attitudes and increasing skills. However, some programs do tend to focus on one or the other. Reports on how various systems have conducted desegregation, and the problems they have encountered, provide not only useful information or examples of active desegregation, but may also serve as guides and source of ideas for other systems. Conferences, work shops, and institutes may act as vehicles for (1) increasing teacher understanding of problems; (2) providing skills and knowledge to handle problems; and (3) exchanging of ideas, difficulties, solutions, etc.

The extensive Berkeley plan for integration includes, in its many facets, the inservice training of teachers with a "compensatory education fund" to be established for inservice training. 6/

A 1967 report on the status of integration in St. Louis includes: (1) racial composition of both student body and staff, (2) a training program for apprentice teachers, (3) preservice preparation for positions in integrated schools, and (4) inservice training for instructional personnel. 7/

A report on four desegregation projects in Hartford and Dade County, Florida; Bernalillio, New Mexico; and Forrest City, Arkansas reveals that inservice training and special work shops were an integral part of the projects. 8/

Not all such programs are incorporated into desegregation plans. In fact, the majority of these special programs are either created apart from a general desegregation plan or are part of an overall policy for improving education in areas with large numbers of disadvantaged students. This does not include programs or courses which are part of college level teacher education, but those programs operated by school districts, communities, etc., for either orienting beginning teachers or providing additional training for currently employed teachers.

College level training and projects which are operated by teacher education institutions and public schools in cooperation with one another will be discussed further on.

Inservice Training, Institutes, Orientation, etc. Many teachers find themselves through either choice, assignment, or changes in their school systems, teaching children who have radically different cultural backgrounds and/or are educationally disadvantaged.

The need for additional training and the problems encountered by these teachers are emphasized in two reports from diverse geographical areas. A report on teachers of the disadvantaged in Texas points out that lack of student progress is directly related to the teacher/school system approach. The three factors of this approach to education of disadvantaged students are: (1) teacher emphasis on mechanical skills and job-getting rather than the development of the student's thinking abilities and decision-making skills; (2) failure to understand the students, and (3) lack of sensitivity to the student's needs. 9/

The second report, an evaluation of 18 New York City schools termed "More Effective Schools" (MES), stresses lack of training and experience of teachers as major reasons for: (1) the inability of teachers to capitalize on special opportunities provided, and (2) lesser progress of students, especially in reading and mathematics. The strongest recommendation of the study was that teachers receive more training to enable them to maximally utilize the advantages of the MES program. 10/

Although limited to two very diverse areas, these reports underscore a need for teacher training based on teacher and student performance.

A number of studies on inservice training and orientation of teachers are available. Some of these programs include principals, others administrators, and/or aides, as well as teachers. Program emphases vary from simple attitude changes and increased understanding of minority cultures to specific skills; and may cover all important aspects of teaching the disadvantaged.

A fairly comprehensive institute was conducted in Denver, Colorado and included some principals and aides, although the majority of the participants

were teachers. In this particular situation, the teachers were involved with Spanish-speaking students. Thus, the institute was designed to (1) give teachers a better understanding of students' cultural backgrounds; (2) develop basic conversational skills in Spanish; (3) introduce bilingual education techniques, and (4) familiarize the staff with new multi-ethnic instructional materials. The institute was deemed generally successful. A shortcoming, however, was that only a small number of teachers involved with the disadvantaged could be accommodated. 11/

Teacher attitude change was the focus of inservice programs in the West and Southwest. A study conducted by Arizona State University attempted to determine attitude changes of 50 teachers selected from school districts in Arizona, California, Nevada, and New Mexico; and to compare those teachers who had received inservice training under ESEA, Title I, and those who had not. Generally, inservice training changed the attitudes of teachers toward disadvantaged students, especially migrant students. However, consultants who were also included did not show attitudinal changes. 12/

Teachers in the Southern Bay Community of California with a Mexican-American minority population participated in a training program conducted through Stanford University and the Office of Education. 13/ The study attempted to determine the effect of cultural-social-economic diversity on selected teacher attitudes. The training porgram focused on increasing teachers' understanding of students' cultural backgrounds and on helping teachers to increase students' self-esteem. Results indicated that classroom experience and inservice training increase teacher optimism and liberality. The report recommends that new teachers not be placed in classrooms with large numbers of disadvantaged students.

A one-week workshop was conducted for teachers newly assigned to inner-city schools in Detroit. 14/ Teacher reactions were 66% unfavorable. However, 94% felt such sessions should be continued if certain changes were effected. Although the workshops were successful in acquainting teachers with school staff and resources, they were less effective in preparing teachers to handle the classroom difficulties and emotional problems they encountered. In addition, teachers felt the school curriculum and sources for remedial assistance were inadequate and did not relate to the inner-city culture.

In this situation, it would appear inservice training should be coupled with a generally improved educational environment. Very little more than simple "orientation" could be accomplished in one week. The value of such workshops would be enhanced if additional on-going sessions were conducted during the school year; thus providing teachers with relevant training in conjunction with classroom experience.

College Level Preparation. In terms of training, prospective teachers have a certain advantage. Particularly, this is true when preservice training consists of a combination of work experience and course work. The growing awareness on the part of educators of the problems of teaching the disadvantaged has resulted in the incorporation of special courses and programs for teachers of

disadvantaged into the teacher education curriculum of many colleges and universities. One study evaluates various teacher preparation programs such as Teacher Corps and Bank Street College of Education. Comments on techniques learned and understandings gained were submitted by 1,034 teachers enrolled in training programs in 33 institutions. Twice as many understandings as techniques were cited. 15/

Teacher Corps is a primary program devoted exclusively to training teachers of the disadvantaged. A 1965 study of the poverty experience of interns elicited the following interesting facts: Those interns with less than one year of poverty experience were rated higher on academic performance, teaching and field experience, relationship with the disadvantaged, personal stability and strength, interpersonal effectiveness, and commitment and promise. The authors hypothesized that interns with less poverty experience were mostly middle-class college graduates who are sufficiently motivated and idealistic to spend a long period in volunteer, poverty work. However, it was felt that since the ratings were done within the program rather than on the job, the interns with either living or working experience of more than one year in poverty areas would be more effective in an actual working situation with the disadvantaged. 16/

An evaluative examination of the Teacher Corps is Teacher Corps: Two Years of Progress and Plans for the Future. 17/ The report includes indepth program descriptions, problems encountered by teachers, and the recruitment and retention of teachers. One of the most positive aspects of the Corps is its integration of teacher training with service to the actual community. For example, 90% of the interns had done some type of community work while in the Teacher Corps. Problems encountered by the interns are similar to those facing other teachers of disadvantaged students, such as, a curriculum too advanced or irrelevant for the students, and inappropriate and/or insufficient materials.

An excellent example of college/community cooperation is the School University Teacher Education Center (SUTEC) in Queens, New York. 18/ The project provided training for undergraduate and pre-tenure teachers and also upgraded the school environment for the students (i.e., meals, summer recreation, special materials, and after-school study centers). Thus, teacher training coincided with improved educational facilities for disadvantaged students. By providing not only traditional educational services, but also additional activities, the school became a more integral part of the community.

The BRIDGE project also included after-school centers in its training program. The project involved teachers in a New York City junior high school and college students who participated in the after-school centers. Teacher changes included curriculum modification, new classroom techniques, and adjustment to pupil ability levels. At the end of three years, "substantial growth in professional understanding and skills" was noted. 19/

Other Preparatory Programs, Surveys, and Reports. The Phase Two report of the South West Educational Development Laboratory and the American Association of Colleges for Teacher Education presents the status of teacher education for the disadvantaged in Texas and Louisiansa. This includes teacher education institutions, inservice programs, teacher preparation programs, and Up-Ward Bound. 20/

A survey of teachers in Appalachia discovered that the teachers felt their college training adequate for most teaching tasks but lacking in terms of teaching disadvantaged students. 21/

In summary, it would appear from the literature that the Teacher Corps is one of the most constructive programs contributing to recruitment and preparation of teachers of the disadvantaged. The integration of the program into the community and its ability to attract highly motivated, idealistic interns are significant factors in its success. However, the high attrition rate promises to assure a high recruitment work load in the future. Of 1,279 interns in the first two-year cycle beginning in 1966, 627 (49%) were still in the program in April, 1968. 22/ The major reason for leaving given by the interns surveyed was funding/legislation uncertainties (41%). This problem is one for which the solution is obvious and reflects, not on the value of the program as such, but rather on the administrative organization and planning of it.

Inservice training programs (including orientation sessions, conferences, workshops, etc.) for teachers currently assigned to schools in disadvantaged areas, although they may effect some attitude changes and provide needed skills, are essentially immediate (and sometimes temporary) solutions to an on-going problem. The exception, of course, would be inservice programs for untrained teachers who strongly desire, and have chosen, to teach the disadvantaged. Since the teachers involved often have not chosen but been assigned to the school, these programs will not necessarily produce dedicated teachers nor result in high retention rates. The most reliable and potentially successful source of teachers for the disadvantaged is teachers or education students who voluntarily enter training programs for this purpose. On the other hand, even well-trained and motivated teachers will realize minimal success in a poor learning environment. For example, the most frequent complaint of Teacher Corps interns was inappropriate curriculum and supplies.

Although the focus here has been on teachers, the learning environment includes also other staff members who have important effects on educational quality and on student performance. It should be mentioned that The Education Professions points out deficient staffing in other areas also (such as therapists and health workers) and emphasizes the need for better staffing ratios generally. 23/

X. TEACHER TRAINING INSTITUTIONS

X. TEACHER TRAINING INSTITUTIONS

There were 969 institutions preparing students to teach at the undergraduate and graduate levels in 1967 according to the last comprehensive report prepared by the American Association of Colleges for Teacher Education, (AACTE). 1/

The Eighteenth Annual List of the National Council for Accreditation of Teacher Education (NCATE) included 498 colleges and universities accredited in at least one of the three possible categories: (1) preparation of elementary school teachers, (2) preparation of secondary school teachers, and (3) preparation of school service personnel such as administrators, supervisors, and guidance counselors. 2/

Twenty eight states, listed in the Annual List, 3/ grant reciprocity privileges in the certification of teachers who are graduates of NCATE accredited institutions. One state on this list limits reciprocity to the other 27 states.

New York had the most institutions producing teachers (67), followed by Pennsylvania (62), Texas (47), California (46), Illinois (45). New York produced the most graduates eligible for initial certification (15,129), followed by Pennsylvania (12,587), California (11,868), Ohio (11,795), Texas (11606), and Michigan (11,301). 4/

Information is supplied in the AACTE publication on the number of graduates by name of institution, by state, by region, and by degree attained. Data are also provided on whether the student has been prepared to teach kindergarten, elementary, junior high or high schools.

In view of the imbalance between supply and demand, it would be very useful if the information furnished in this 1967 report were collected annually or at least biennially. Information is not now supplied on subject matter specialization, and this should be added. It would be helpful to know which institutions and states were producing teachers in areas where shortages exist, and which were adding to the surpluses.

XI. REFERENCES

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Chapter III

1. U.S. Department of Health, Education and Welfare, National Center for Educational Statistics. Projections of Educational Statistics to 1970-80, Washington, D.C., p. 57.

2. Hill and Knowlton, Inc. Youth and Careers in Education New York City, N.Y., 1971

3. Research Bulletin, National Education Association, Teacher Job Shortage Ahead, Washington, D.C., Oct., 1971.

4. Ibid.

5. Research Division -National Education Association, Teacher Supply and Demand in Public Schools, 1970, Washington, D.C. p. 22,23

6. Ibid. p. 15

7. Ibid. p. 19, 20

8. Parker, Garland C. "College and University Enrollments in America", 1971-72; School and Society, pp. 116-117, Feb., 1972. Published by the Society for the Advancement of Education, N.Y.C., N.Y.

9. Ibid. p. 128

10. Research Bulletin -National Education Association, Teacher Job Shortages Ahead, Op. cit.

11. Miller, Susan B. "Colleges Discourage Would-be Teachers, Citing Job Shortage", Wall Street Journal, Feb. 8, 1972.

12. Macroff, Gene I. "Teacher Training Curbed as Job Market Tightens" The New York Times, Feb. 7, 1972

13. Research Division -NEA, Teacher Supply and Demand in Public Schools, op. cit., pp. 22, 23

14. Ibid p. 25

15. Ibid p. 26

Chapter IV

1. Research Division -NEA, Teacher Supply and Demand in Public Schools, 1970, p. 7

2. Greenfield, Phyllis O., Education Staffing Patterns Update, National Center for Information on Careers in Education, Apr., 1972, Washington, D.C.

3. Prepared by National Planning Association by state submissions pursuant to Guidelines for State Plan for Professional Personnel Development in Vocational Education. EDPA, Part F, Sec. 553, 1971, Bureau for Educational Personnel Development, United States Office of Education

4. Ibid.

5. Ibid.

6. National Center for Educational Statistics. Digest of Educational Statistics, 1970.

7. Advisory Council on Vocational Education. Vocational Education: The Bridge Between Man and His Work, 1968

8. Evans, Rupert N., "Staffing Vocational-Technical Programs"in Vocational Education: Today and Tomorrow, 1971 p. 199-218.

9. Ibid.p. 209

10. Ibid.p. 210

11. Ibid.p. 212

12. King, Jewell T., A National Study of Certification Requirements for Occupational (Gainful) Employment of Home Economics Teachers. Vocational Research Coordinating Unit, Oklahoma State University, 1971

13. Dirks, Marie and others, The Special Contribution of the College Home Economics Education Supervisor to the Student Teaching Situation. Measurement and Research Center, Purdue University, Lafayette, Indiana, June 1967.

14. Garman, E. Thomas, "Economic Literacy of Prospective Business Education Teachers" in Business Education Forum, 24, 4, Washington, D.C.

15. West Virginia Research Coordinating Unit for Vocational Education, A Survey of Vocational Educators to Determine Inservice Educational Needs. Marshall University, Huntington, West Virginia, 1969.

16. Branter, S. T., Trade and Technical Teachers' Opinions on Inservice Education. Pennsylvania State University, University Park, Penna., 1964

17. Ginther, R. E. and Miller, W. R. An Analysis of Graduate Work in Institutions with Programs for Industrial Arts Education Personnel. American Council on Industrial Arts Teacher Education, Washington, D. C., 1965

18. Baker, George Lewis. An Investigation of Offerings of Industrial Arts Teacher Education Institutions in the Area of Automation & Cybernetics as Compared with Current Practices in Industry; University Microfilms, Ann Arbor, Michigan, 1970.

19. Knoll, Peter F., Jr. and Stephens, John F., Inservice Training for Vocational Teachers in Utah. Final Report. Utah Research Coordinating Unit for Vocational and Technical Education, Salt Lake City, Utah, 1968.

20. Crawford, Lucy C. A Competency Approach to Curriculum Construction in Distributive Teacher Education; Virginia Polytechnic Institution, Blackburg, Virginia, June, 1969

21. Cameron, Walter and Cotrell, Calvin J. Remote Feedback Techniques for Inservice Education, Assessment of Micro-teaching and Video Recording in Vocational and Technical Teacher Education: Phase X--Interim Report. Research and Development Series No. 40; Columbus, Ohio, 1970.

22. State Boards of Vocational and Technical Education, Annual Financial and Statistical Reports, Bureau of Adult, Vocational and Technical Education, Office of Education, Washington, D.C.

23. Silverman, Leslie and Metz, Stafford, Selected Statistics on Educational Personnel, U.S.O.E., Washington, D. C., 1970, p. 24

24. Stephens, Thomas M., and others, "Certification Requirements for Teachers of Emotionally Disturbed Children and Nomenclature Used to Describe the Handicap, Reported by States" in Exceptional Children, 34, 9, May, 1968

25. Western Interstate Commission for Higher Education, Special Education in the West, 1969

26. Linzer, Lita, Survey of Certification Requirements for Teachers of Children with Learning Disabilities, 1969

27. The Southern Regional Education Board, The South's Handicapped Children. 1964-65.

28. Holmberg, Gerald R., Exploratory Study to Determine the Feasibility of a Comprehensive Program for the Development of Special Education Services for Emotionally Disturbed Children in Arizona, Nevada, New Mexico, and Utah. Final Report, 1968

29. Cain, L. and Levine, S. and others, A Study of the Effects of Community and Institutional School Classes for Trainable Mentally Retarded Children, 1961.

30. Hebeler, Jean R. and Simms, Betty H. Inservice Program for Teachers of Educable Mentally Retarded Children, 1969.

31. Myen, Edward L., Demonstration of Dissemination Practices on Special Class Instruction for the Mentally Retarded: Utilizing Master Teachers, Vol. II. Final Report and "A Statewide Approach to Inservice Training for Teachers of the Mentally Retarded" in Exceptional Children, 35,5, 1969.

32. Cruickshank, William and others. The Preparation of Teachers of Brain-injured Children, 1968.

33. Gold, Lawrence. Preparing Classroom Teachers to Work with Severely Underachieving Pupils through an Internship in a Regional Disability Center, 1970

34. Johnson, John L., "Teacher Preparation for Educating the Disturbed: Graduate, Undergraduate, or Functional" in Exceptional Children, 34, 5, 1968.

35. Cain, L. and Levine, S., op. cit.

36. NCES. Digest of Educational Statistics, 1970

37. Research Division -NEA Nursery School Education, 1966-67

38. Office of Economic Opportunity. A Study in Child Care, 1971. In four volumes: Findings, Vol I; Center Case Studies, Vol. II-A; System Case Studies, Vol. II-B; Cost and Quality Issues for Operators, Vol. III; Technical, Vol. IV.

39. Katz, Lilian G. and Weir, Mary. Staffing Pre-Schools: Background Information, March, 1969

40. McLure, Illiam P. and Pence, Audra May. Early Childhood and Basic Elementary and Secondary Education. University of Illinois, 1970

41. Gore, Lillian L. A Survey of Early Elementary Education in Public Schools. Office of Education, 1961.

42. Research Division, National Education Association. Head Start Programs Operated by Public School Systems, 1966-67, 1968.

43. Westinghouse Learning Corporation and Ohio University. The Impact of Head Start, An Evaluation of the Effects of Head Start on Children's Cognitive and Affective Development: Volume 1, Text and Appendices A - June, 1969.

44. Boger, Robert P. Head Start Teacher's Ethnic Group Membership and Attitude Toward Child Behavior, Some Relationships, University of Texas, 1967.

45. Rodriguez, Armando. Bilingual Education, a Look Ahead, 1969, ERIC, EDO 30505

46. The Psychological Corporation. Recruitment and Training of Spanish Speaking Teachers. New York City, N.Y. December, 1969

47. American Association of Junior Colleges, Directory, 1971 p. 88, Washington, D.C.

48 Ibid.p. 6

Chapter V

1. Research Division, National Education Association. Teacher Supply and Demand in Public Schools, 1970, Washington, D.C.

2. National Center for Educational Statistics. Projections of Educational Statistics to 1979-80, GPO, Washington, D.C., 1971

3. Brownell, Samuel, et. al. Teacher Education--An Urgent Matter. A Report to the Commission for Higher Education, State of Connecticut, Academy for Educational Development, Inc., New York, 1966.

4. Dickenson, George E. The Feasibility of Educational Specifications for the Ohio Comprehensive Elementary Teacher Education Program. Phase II. Final Report, Toledo University, Ohio, 1970

Johnson, Charles E., Ed. and others. The Feasibility of the Georgia Educational Model for Teacher Preparation--Elementary. Vol. III Job Descriptions. Final Report. University of Georgia, Athens, Georgia, 1970

A Feasibility Study on the Model Elementary Teacher Education Program. Final Report, University of Massachusetts, Amherst, Massachusetts, 1970.

5. Cooper, James M. A Guide to Model Elementary Teacher Education Programs, AACTE, Washington, D.C., 1969

Dodl, Norman R. A Guide to a Model for the Preparation of Elementary School Teachers, AACTE, Washington, D.C., 1969

Southworth, Horton C. A Guide to a Model of Teacher Training for the Individualization of Instruction, AACTE, Washington, D.C., 1969

6. Benjamin, William and others. Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teachers (Final Report, Vol I & II, and Evaluation of Final Report), Syracuse University, New York, 1968.

Weber, Wilford A. A Study of the Feasibility of the Refined Syracuse University Specifications for a Comprehensive Undergraduate and Inservice Teacher Education Program for Elementary Teacher. Final Report, Syracuse University, New York, 1969.

7. Symposium on the Training of Teachers for Secondary Schools. An I/D/E/A Occasional Paper. Institute for the Development of Educational Activities, Dayton, Ohio, 1970

8. Gordon, I.J. and others. The Florida Experiment of Undergraduate Teacher Education, University of Florida, 1963

9. Baird, I. Hugh and Webb, Clark. Learning Differences Resulting from Teacher- and Student-Centered Teaching Methods. Paper presented at annual AERA meeting, New York, 1967

10. Litwiller, Connie Helen. Enrichment: A Method of Changing Attitudes of Prospective Elementary Teachers Toward Mathematics, Indiana University, Bloomington, Indiana, 1968

11. Lund, Victor E. Teacher Preparation Programs and First Year Teacher Effectiveness, Oregon State System of Higher Education, 1965

12. Cumming, John R. and Cheuvront, Galen. Student Teacher Practices Related to Faculty Load of Selected Colleges and Universities of Illinois, Michigan, Minnesota, and Wisconsin, 1967-68; Wisconsin State University, Superior, Wisconsin, 1968

13. American Association of School Administrators. Cooperation in Student Teaching, National Education Association, Washington, D.C., May, 1964

14. West Virginia Department of Education. Pilot Center for Student Teaching. West Virginia Multi-State Teacher Education Project. Final Report. Charleston, West Virginia, July, 1968

15. Bebb, Aldon and Monson, Jay A. A New Model for the Supervision of Student Teaching, New York University, New York, 1969

16. Cruickshank, Donald and Broadbent, Frank. An Investigation to Determine Effects of Simulation Training on Student Teaching Behavior, USOE Cooperative Research Project 5-0798.

17. Cunningham, Glennis. Multidimensionality: Implications for Preparation of Teachers. Paper presented at annual AERA meeting, Minneapolis, Minnesota, 1970.

18. Ward, Blaine E. A Survey of Microteaching in NCATE-Accredited Secondary Education Programs, Stanford University, Palo Alto, California, 1970.

19. Belt, W. Dwayne. Micro Teaching--Observed and Critiqued by a Group of Trainees, February, 1967.

20. Bondi, Joseph C. Feedback in the Form of Printed Interaction Analysis Matrices as a Technique for Training Student Teachers. Paper presented at annual AERA meeting. Los Angeles, California, February, 1969.

Erratum

This report lacks page 47, page 48 correctly follows page 46.

Chapter VI

1. Boylan, Laurence. Sixth Year Graduate Programs: A Meeting Report, Council of Graduate Schools in the United States, Chicago, 1964

2. Research Division. NEA Research Memo, "Professional Growth Requirements Specified in 1968-69 Salary Schedules (Reporting School Systems with Enrollments of 6,000 or more)", National Education Association, Washington, D.C., April, 1969

3. Burbank Unified School District. The Master's Degree and Teacher Salaries, Burbank, California, 1965

4. Bigelow, Eugene Bruce. A Survey Analysis and Proposed Program of Inservice Education in Selected School Districts in Six Mid-Western States, University of South Dakota, 1969.

5. Monahan, William G. and Miller, Howard E. Planning and Developing Inservice Education, University of Iowa, 1970.

6. Research Division, NEA. Inservice Education of Teachers, Research Summary 1966-71, National Education Association, Washington, D.C., 1966.

7. Hite, F. Herbert. Effects of Reduced Loads and Intensive Inservice Treatment Upon the Classroom Behavior of Beginning Teachers, Washington State University, Seattle, Washington, 1966

8. LaShier, William and Kurtz, Edwin B. Final Report of the NSF-CCSS Grant GW-4164 Conducted at Kansas State Teachers College in 1969-70, Emporia, Kansas, 1970.

9. Palm Beach County Board of Public Instruction. Individualized Inservice Teacher Education (Project IN STEP). Evaluation Reports: Phases I and II. Boynton Beach, Florida, 1970.

Chapter VII

1. Bowman, Garda W. and Klopf, Gordon J. New Careers and Roles of the American Schools. Bank Street College of Education for the Office of Economic Opportunity, N.Y., 1968

2. American Federation of Teachers. "Paraprofessionals: Fastest Growing Force in U. S. Schools." The American Teacher, Vol. 54, No. 6, February 1970.

3. University Research Corporation. New Careers in Education: A Status Report, Washington, D.C., July 1970, p.1.

4. Ibid.p.5

5. Savers, V. J. Guidelines for the Selection and Utilization of Teacher Aides in Elementary Public Schools. PhD Dissertation; University of Pennsylvania, Philadelphia, May 1968.

6. DeHart, Ruth. Parameters of the Teacher Aide Role: A Study of Teacher Aides in Selected Gulf Coast School Districts. Gulf Coast Research Development Association, Houston 1968, p. 43.

7. Haynes, Earl S. A Study of Teacher Aide Employment for the School Year 1966-67 in Selected School Districts of Missouri. PhD Dissertation: University of Kansas, Lawrence, Kansas. 1968, p.133

8. The Status of Paraprofessionals in New York State School Districts, Phase One of a Continuing Study of School Paraprofessionals: Roles and Job Satisfaction. Cornell University, Ithaca, N.Y., November, 1969, p.38.

9. Bowman, Carda W. and Klopf, Gordon J, op. cit. p. 256.

10. Denham, William H. and Shatz, Eunice O. "Impact of the Indigenous Nonprofessional on the Professional Role". in New Careers Perspectives, Reprint Series. National Institute for New Careers, University Research Corporation, Washington, D.C. June, 1969, p.15.

11. Brown, Edward T. and others. The Teacher Aide in South Carolina, Preliminary Report of a Status Study. July, 1967. p.22.

12. DeHart, op cit.

13. Savers, op cit.

14. Haynes, op cit.

15. Conant, Eaton. A Cost Effectiveness Study of Employment of Nonprofessional Teaching Aides in Public Schools. Institute of Industrial and Labor Relations, University of Oregon, Eugene, March, 1971. p.163.

Chapter VIII

1. American Association of Colleges for Teacher Education. Teacher Productivity - 1967, AACTE, Washington, D.C., 1968.

2. National Education Association. Tabular Summary of Certification Requirements for School Personnel in the United States, 1967; NEA, Washington, D.C., 1967.

3. Georgia Department of Education. Georgia Education Statistics 1969-70 Certificates; Division of Planning, Research and Evaluation, Georgia Department of Education, Atlanta, Georgia, 1970

4. Conant, James Bryant. The Education of American Teachers, McGraw-Hill, New York, 1964.

5. Fagan, Edward R. "Conant on Teacher Education, A Critical Analysis" in The Clearing House, 39, 8, 461-566, 1965

6. National Commission of Teacher Education and Professional Standards. A Manual on Certification Requirements for School Personnel in the United States 1970; National Education Association, Washington, D.C., 1970

7. Andrews, Theodore E. A New Style of Certification; University of the State of New York and New York State Department of Education, Albany, New York, 1971.

8. Andrews, Theodore E. New Directions in Certification: Improving State Leadership in Education, Washington State Board of Education, Sept., 1970

9. Schalock, H. Del. The Focus of Performance-Based Certification: Knowledge, Teaching Behavior, or the Products that Derive from a Teacher's Behavior. Paper presented at Performance-Based Certification Conference, Miami Beach, Florida, 1970.

10. Massanari, Karl. Performance-Based Teacher Education: What's It All About? American Association of Colleges for Teacher Education, Washington, D.C. 1971.

11. Johnson, Charles E. and Shearron, Gilbert F. Selected Teacher Performance Specifications Generally Applicable to Teacher Education Curricula; University of Georgia, Athens, Georgia, 1969.

12. Sheppard, Douglas C. Certifying Teachers of Modern Foreign Languages for American Public Schools -- 1969, American Council on the Teaching of Foreign Languages, New York, 1970.

13. Anderson, Theodore and Boyer, Mildred. Bilingual Schooling in the United States, Southwest Educational Development Laboratory, Austin, Texas, 1970.

14. Montague, Harriet F. Certification of Teachers of Secondary School Mathematics; State University of New York, Buffalo, New York, 1970.

15. Kinder, Robert Farrar. State Certification of Reading Teachers and Specialists -- Review of the National Scene. Paper presented at International Reading Association Conference, Boston, 1968

16. Tuttle, Donald R. "Basic Considerations in Preparing, Certifying, and Assigning Teachers of English" in College English, May 1963; and "The Built-In Imbalance in American Education" in the Journal of Teacher Education, March, 1963.

17. Fagan, op. cit.

Chapter IX

1. Office for Civil Rights (DHEW). Directory of Public Elementary and Secondary Schools in Selected Districts: Enrollment and Staff by Racial/Ethnic Group; Fall, 1970

2. National Advisory Committee on Civil Disorders. Report of the National Advisory Committee on Civil Disorders, Chapter XVII, Part II, Education, GPO, Washington, D.C., March, 1968.

3. Baxter, Albert Sidney. Status and Characteristics of Displaced Negro Teachers in Arkansas, The University of Arkansas, 1970.

4. Equal Educational Opportunity--1971, Part 10--Displacement and Present Status of Black School Principals in Desegregated School Districts. Hearings before the Select Committee on Equal Educational Opportunity of the United States Senate, 92nd Congress, First Session. Washington, D.C., June 14, 1971

5. Wooten, James T. "Negro Educators Aided in Upgrading", New York Times, December 23, 1971.

6. Wennerbergh, C. H. Desegregation of the Berkeley Schools -- Its Feasibility and Implementation. The Superintendent's Report of a Staff Group Study, 1964 and Sullivan, Neil V. An Addendum to Integration--A Plan for Berkeley. A Report of Berkeley Board of Education, California, January, 1968.

7. St. Louis Public Schools. The Status of Integration in the St. Louis Public Schools During the 1966-67 School Year--A Factual Report to the Board of Education, St. Louis, Missouri, 1967.

8. Ralston, Carolyn and Lewis, Ann. Special Field Reports on School Desegregation Projects: Hartford, Forrest City, Bernalillio, Dade County; New York, N.Y., May, 1971

9. Lawrence, Thomas. The Selection and Training of Teachers of Educationally Disadvantaged Children in Texas; 1969.

10. Psychological Corporation. More Effective Schools Program in Poverty Area Schools 1968-69; New York, N.Y., 1969

11. Denver County Public Schools. Institute for Teachers of Disadvantaged Youth (June 9 - July 11, 1969) Director's Report. Denver, Colorado, 1969

12. Arizona State University. Teaching Teachers to Teach the Disadvantaged; Study of Attitude Change; Tempe, Arizona, February, 1968.

13. Stanford University. The Effect of Cross-Culture Inservice Training on Selected Attitudes of Elementary School Teacher Volunteers: A Field Experiment; 1970.

14. Obradovic, Sylvia M. Course Evaluation of the Wayne State University "August 24-28, 1964 Workshop for 71 Teachers Newly Assigned to 20 Detroit Schools 1966

15. Miller, Harry. Education for the Disadvantaged. Free Press, New York, May, 1967

16. Lawrence, G. H. and Long, L.M.K. The Effect of Previous Poverty Experience on Success in Teacher Corps Preservice Programs; 1965

17. Washington School of Psychiatry. Teacher Corps: Two Years of Progress and Plans for the Future; 1968.

18. Gewirtz, Max and Weinberg, George. SUPEC, A Project to Demonstrate the Effectiveness of a School University Teacher Education Center in Preparing Teachers of Disadvantaged Children. Center for Urban Education, New York; 1966

19. Queens College, City University of New York. The Preparation of Teachers for Schools in Culturally Deprived Neighborhoods (The BRIDGE PROJECT), New York, 1965.

20. Southwest Educational Development Laboratory. Preparing Teachers of Disadvantaged Children; A Survey of Characteristics of Elementary Teacher Education Programs in Texas and Louisiana; Austin, Texas, 1968

21. Appalachian Regional Commission. Teachers in Appalachia; 1970

22. Washington School of Psychiatry, op. cit.

23. DHEW. The Education Professions, 1969-70.

Chapter X

1. The American Association of Colleges for Teacher Education. Teacher Productivity, 1967, Washington, D.C., 1968.

2. National Council for Accreditation of Teacher Education. Eighteenth Annual List, 1971-72, Washington, D.C. 1972

3. Ibid.p.37

4. The American Association of Colleges for Teacher Education. op. cit.